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Treatment of the "Set-Back"

By *DeWitt Clinton Pond*

Author of "Concrete Construction," "An Architect's Simple Engineering Problems," etc.

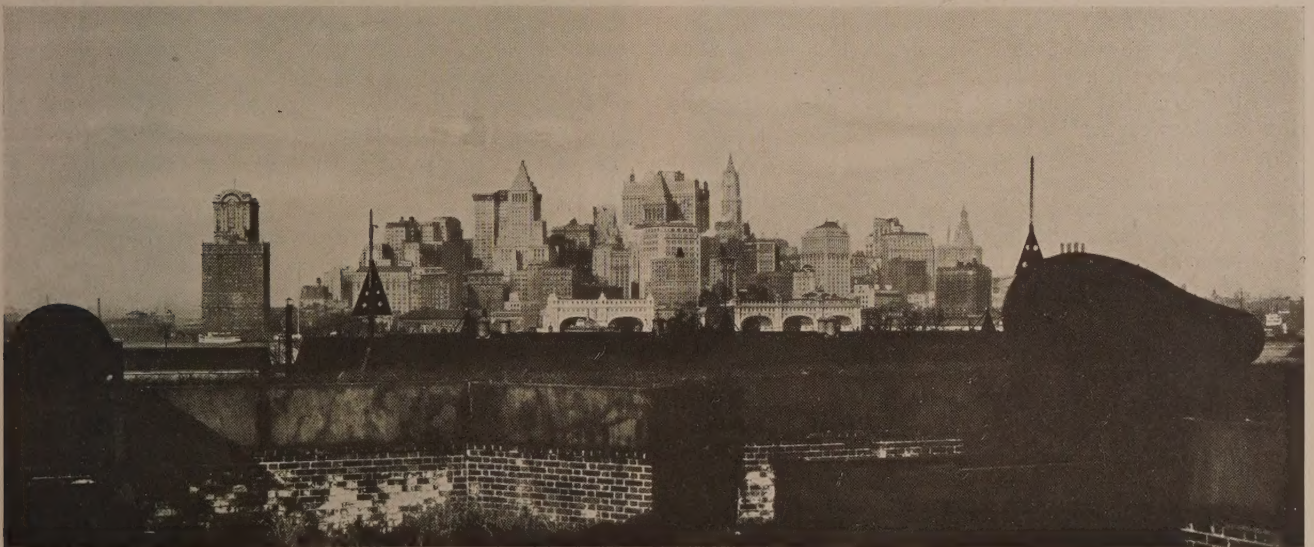
THE treatment of "set-backs" is one of the most interesting architectural developments in New York to-day. At the time of the passing of the ordinance it is probable that not more than one per cent of the architects in the greater city had any real knowledge of the effect the zoning law would have upon artistic developments, for the measure was passed as a utilitarian protection against undue congestion and for the purpose of providing light and air in the lower rooms of towering structures.

From this standpoint there can be no question as to the desirability of such a law. If one stands in City Hall Park about five o'clock in the afternoon when the workers, housed in the buildings of lower Manhattan, start for their homes he has a very graphic demonstration that, as far as this part of the city is concerned, high pressure is developed due to restricted and hardened arteries. The streets are mere runways, with hordes swarming through them, literally filling the thoroughfares from building line to building line. It is a thrilling sight, but when one realizes that this is the peak traffic-load which is thrown upon the streets on account of ordinary business conditions, he can realize with something akin to a shudder what conditions might arise if some great catastrophe should make it necessary to empty every building at exactly the same time. As it is, business hours are "staggered" to a certain extent. Some workers go home at four or four-thirty, some at five, and still others

at six. The streets are thronged for more than an hour and as quickly as possible subway, elevated, and bridge trains, aided by almost numberless ferries, pick up the crowds and carry them away. It is truly shocking to realize what might happen if the streams of humanity suddenly became dammed, transit facilities clogged, with human beings still pouring out of buildings. The streets could not hold them. Kings of finance, captains of industry, clerks, teamsters, stenographers, and all the thousands of professional workers would be thrown into a swirling tumult, actually fighting for space to stand. That the bulk of buildings had to be restricted became so apparent there was almost no real opposition to the measures advanced by those who framed the zoning ordinance. There was also a realization that as buildings became higher and more bulky the spaces on the lower floors became as dark as tombs. Rooms in many of the world-famous skyscrapers require artificial light even at noonday. And so, from a business angle, the high building could not be regarded with whole-hearted enthusiasm.

Therefore, as far as limiting the height and bulk of the buildings was concerned, there was no valid objection raised and to-day the zoning laws are regarded as being as fundamental as the constitution.

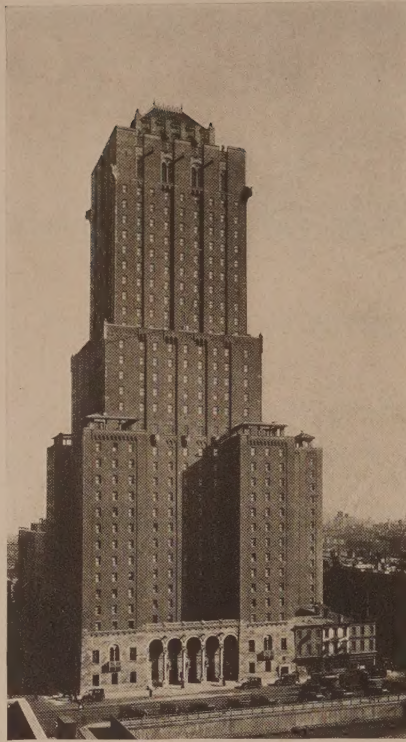
The rules adopted to limit the height were based upon the widths of the streets serving as the channels through which the streams of humanity flowed to and from the huge



Skyline of lower Manhattan from Governors Island.



American Radiator Building. Raymond M. Hood, Architect.



Hotel Shelton. Arthur Loomis Harmon, Architect.



Ritz Tower. Emery Roth, Architect.

structures. Obviously a narrow street is as much out of scale with a lofty building as a finely executed ornament would be on the great pyramid. Taking the street as the unit of measurement, the city was divided into districts in which buildings might be built to heights varying from three-quarters of the width of the street to two and one-half times the width.

Had the zoning laws been adopted when New York was very young it is probable that there would have been less allowable variation in height, but concessions had to be made to existing conditions. To those of us who love the almost fairylike agglomeration of Gothic towers, Egyptian pyramids and Roman colonnades that rise up through the morning mists of the Bay, perhaps this is just as well, but it is true that steps to curb the competition in height were taken none too soon.

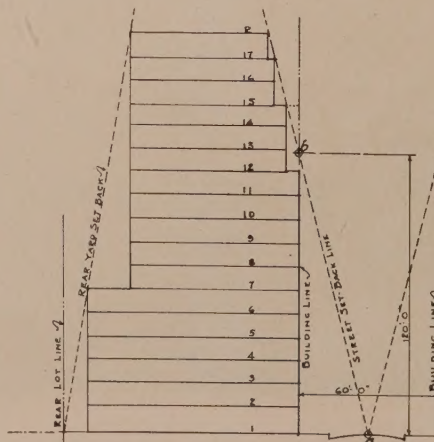
Although heights are restricted, this does not mean that buildings cannot be built higher than the limits established along the building lines of the streets. The law requires, however, that if it is desired to build higher than the legal limit the stories above the limit must set back from the street in accordance with certain rules. The diagram here-with illustrates how the upper stories must set back in a "two-times district." The street is considered as a sixty-foot street, which means 60 feet between building lines. In such a district a building facing directly on the property or building line can be carried to a height of 120 feet—twice 60 feet. Now, if it were desirable to carry the construction still higher this must be

done within the sloping lines radiating from the centre of the street. The wording of the law is somewhat technical but, by establishing lines such as shown in the diagram, the height limit can be established by graphical methods.

The method involves the establishment of a point at the centre of the street, (a), another point on the building line at a height equal to twice the width of the street, (b), and drawing a line through these two points. The building must be built within such a line except where certain projections are allowed as will be explained later.

The building must also set back from the rear lot line as shown. Such set-backs are less spectacular, as the rear elevations of buildings in large cities are seldom things of beauty and the breaks are made with less regard for the architectural effect. From the point of view of obtaining light in the courts and rear yards, and of limiting the bulk of buildings, such set-backs are very important, and the rules governing the establishment of the set-back lines are much more arbitrary than those governing the stepping back of the front façade. There are no concessions granted for the purpose of producing pleasing transitions from one plane to another of wall surface.

Court and yard set-backs are governed by the height of a building and the district in which it is located. The city is divided into A, B, C, D, and E districts and, whereas in the A districts, in the more congested portions of the city, no rear yard is required and the stepping back is governed by a pitch of one inch for every foot of height, in an E district in the



outskirts of the city, large rear yards are required and courts must measure at least two and one-half inches for every foot of height. It can be seen that, as a building projects upward, beyond the established heights, it must assume a pyramidal shape and it is obvious that beyond a certain height such a shape becomes commercially impracticable.

Set-back lines have no relation to the floor lines of a building nor to the arrangement of the supporting members, such as columns. It is the architect's task to fit his structure to the conditions and to design his façade so that the transitions are made without too many abrupt breaks. It is tasks of this nature that have resulted in the newer types of architecture shown in the accompanying illustrations.

Inspection of the diagram brings out the fact that often the first set-back will bring the exterior wall to a line that does not conform to the position of the interior columns, so that at the point where the new wall is erected a new line of columns must be introduced. Obviously these must be carried on girders which span between the inner and outer columns of the floors below. Of course, if the wall can be brought back to an already existing line of columns this simplifies the construction, but as this would mean an offset of from 15 to 20 feet it is not usually advisable to do this.

Steel-skeleton construction has been a boon to architects in many ways, not the least of which is in setting back the walls of upper stories. It is remarkable how the engineers have come to the architect's aid in this respect, and no less remarkable is the almost childlike faith that the architects have in the ability of engineers to perform miracles.

Although the main part of the building must come within the limits established by the sloping lines, in order to grant the architect a certain freedom to accomplish artistic ends, certain exceptions are allowed by the law. Dormers may be built out; and towers, the areas of which cannot exceed 25 per cent of the lot, may be carried to any height.

By taking advantage of such exceptions, architects are able to mold the upper part of their buildings with the various shapes that are becoming characteristic of the newer skyline of New York.

Whereas the older buildings were characterized by an almost severe treatment of cornices or parapets, now towers, finials, dormers, urns, and even obelisks grace the upper part of the building. If one is familiar with the methods that were used by Christopher Wren or Gibbs in designing towers or steeples for their churches, he can see how the same methods are often used to-day in the design of set-back walls, if the general design of the building is of classical character. Wren and his followers used urns, scrolls, and volutes freely when they wanted to make transitions from the bulky base to the smaller top of a tower. To-day these same details are used.

Miniature towers also appear at corners of the buildings, and dormers are carried up as decorative features of the façades. Such designs call for reliance upon the ingenuity of the engineers to shape the steel skeleton to the irregular forms that are becoming characteristic of the newer buildings. This, however, is part of the routine of the engineering offices. No new types of beams need be used, as one outstanding advantage of steel construction has always been its flexibility. Steel girders and columns are made in depths to fit almost any load, and lengths can be cut to fit various spans. Where, in rare cases, the standard depths or lengths cannot be used, then it is possible to build up special steel members to fit the unusual spaces or forms. This has always been the case and, although the adoption of the zoning law has multiplied the cases where the steel frame must be something different from typical beam-and-girder construction, still these laws have produced little that is really new in steel design.

It is interesting to see how in these high buildings use



Hotel Ambassador. Warren & Wetmore, Architects.



S. W. Strauss Building. Warren & Wetmore, Architects.



Fraternity Building. Murgatroyd & Ogden, Architects.

can be made of almost any style of architecture and still maintain harmonious designs. A style that seems particularly effective is the Romanesque of northern Italy, on account of the informality of the Italian structures, their towers and



Margon & Glaser, Architects.



Murray Hill Building. W. L. Rouse and L. A. Goldstone, Architects.

corbelled parapets. Tile roofs are beginning to appear, and towers at salient angles. These belvideres are becoming almost commonplace. But where this style might be the favorite of some architects, Gothic motives are used by others.



Real Estate Board Building. Farmers' Loan & Trust Building.



A group of set-backs on West 39th Street.

The results depend more upon the skill of the designer than upon the style that he uses. There are architects, thoroughly imbued with the spirit of classic designs, who have found no difficulty in adapting the motives of the builders of two thousand years ago to the most modern mandates of imperious building departments. All styles, from the ancient classics to the traditionless new art, have been used, and the success or failure of the treatment depends not on the styles, but on the way in which they have been used.

In general, however, where the designers have taken advantage of the exceptions allowed by the zoning ordinance, and dormers and towers are used to soften the effect of the set-backs, the more informal styles are used most successfully. Classic motives naturally result in the emphasis of horizontal lines, and



Aeolian Hall. Warren & Wetmore, Architects.

when these are used it is difficult to break them gracefully in set-backs. The result is that where the buildings of ancient Rome or Greece have furnished the inspiration for our modern designers the upper stories are apt to appear as rectangular boxes placed one upon the other. To proportion these boxes so that the effect will be harmonious is not a simple task. One box may appear to be too heavy for the one below it or it may be designed with the decorative motives too finely detailed to be in scale with the lower parts of the building.

EDITOR'S NOTE:—In a following article Mr. Pond will give a more detailed description of the set-back problems, analyzing the diagrams used in submitting designs to the building departments and setting forth the methods used by designers to produce successful façades which accord with the zoning ordinance.



Cunard Building. Benjamin Wistar Morris, Architect.



Fisk Building. Carrère & Hastings, Architects.



PARIS SALON, 1925.

From a drawing by Lansing C. Holden, Jr.

Ornamental Iron Work in Early Ohio Architecture

By Thomas E. O'Donnell, A. I. A.

Assistant Professor of Architecture, University of Illinois

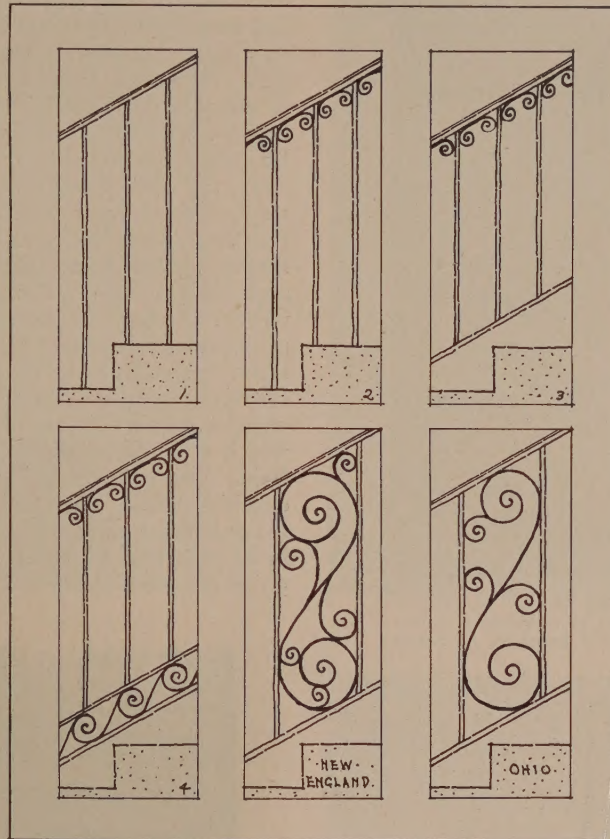
IRON, in the form of bars of workable size, was introduced into Ohio at a very early date in its settlement. It was imported from mills in Pennsylvania, Virginia, and Kentucky. It was brought down or across the Ohio River to the river towns on the Ohio side, and from there it was transported by wagon to inland communities, especially along the eastern and southern borders.

The first uses of iron were of a strictly utilitarian nature. Many accounts come down to us of the importing of iron and other supplies for the construction of grist-mills, saw-mills, and other building construction: simple builders' hardware, such as straps for fastening wooden members, hinges, latches. In time there was need for railings, step-guards, fences, gates, and other features which lent themselves to ornamental treatment. All of these could be readily fashioned by the local blacksmith out of imported wrought iron in the form of small bars and rods, of such a size as to require a minimum amount of labor to work them.

The early Ohio craftsmen — blacksmiths, millwrights, and builders — came from the East, where they had been trained, and at first worked in the same manner as in the East, although in time the Ohio work took on certain characteristics peculiar to the Middle West. It is not unlikely that some of the

earliest work, especially the more ornamental designs, were executed in the Eastern States and shipped to Ohio. Many designs found in Ohio are almost identical with those on some of the older Eastern houses.

Some of the earliest attempts of the Ohio craftsmen at ornamental effects are to be found on simple balcony railings and step-guards. In these, stock bar iron, from one-half inch to about three-quarters inch square, were used for the vertical members. These were attached to a small two-piece handrail at the top, and at the base were set directly into the stone steps, or were attached to a simple bar of about the same dimension, or a little larger. The ornamental portion consisted in small coiled pieces of thin strap iron, set between the upright bars on the under side of the top rail, as shown in the accompanying illustration. The next step was to introduce decorative curved members at the mid points on the uprights, and a still farther step was to use a double rail at the bottom filled with a running scroll. With these simple elements the designers worked out many ingenious combinations. By the use of rods for uprights instead of square bars, still different decorative effects were obtained. Various designs were used for



The earliest type of iron work in Ohio, showing the various steps from the very simplest to the more ornamental. The earliest work was made entirely of square bars and strap iron, of stock design.

the supporting newels and posts, most of them being square in section, and terminated by means of an iron or brass ball.



Early period work in Columbus, Ohio. All wrought-iron work, and of very fine craftsmanship. This shows the use of spindles instead of the square bars which are characteristic of the earliest work in Ohio.



Step hand-rail in Columbus, Ohio. Middle period, showing a combination of cast-iron posts and wrought-iron rails and spindles.



Late period work in Ohio, showing the use of delicate ornamental cast iron as applied to complete architectural features. Porch on an old house in Marietta, Ohio.

The earliest work was evidently all done by hand at the forge. Much of it was welded or riveted. In time, however, machinery was used to reduce the labor, the result being inferior designs. The scrolls and other curved portions became stiff and mechanical.

With a greater demand for ornamental iron work, and high price of labor, there was a tendency to look for some means to produce ornamental designs more cheaply. Even with iron-working machinery, the cost of wrought-iron work was still high. This led to the adoption of cast-iron work, instead of wrought-iron. This system permitted of making a pattern and casting sections in duplicate, which could be assembled in a continuous design, for railings, fences, etc. By using two different section designs, and alternating them in assembling, variety could be given to the design, and by means of an occasional decorative panel or design, still greater variety could be attained. This system naturally led to stock designs which could be adapted to a great variety of work. This method permitted of many fanciful designs that were wholly inappropriate in iron. Several railing and fence designs, such as those illustrated here, are to be found in every part of Ohio. Some especially interesting fence designs are to be found still standing to-day, in Chillicothe. Although these may have seemed to the builders of the time as being quite practical, and even beautiful, yet this method resulted in making ornamental iron work so cheap and mechanical in appearance that the art declined rapidly. Time has shown also, that light fanciful designs in cast iron, exposed to the weather, are not durable and most of the work of the period has already rusted away.

A more effective and durable use of ornamental cast iron seems to be its use in combination with wrought iron, where decorative cast-iron finials and ornamental bits were incorporated into what is otherwise work constructed of wrought iron. A good example of work of this type is to be seen in the fence and step railing on the Reeves-Woodrow-Fullerton house, on Paint Street, Chillicothe.

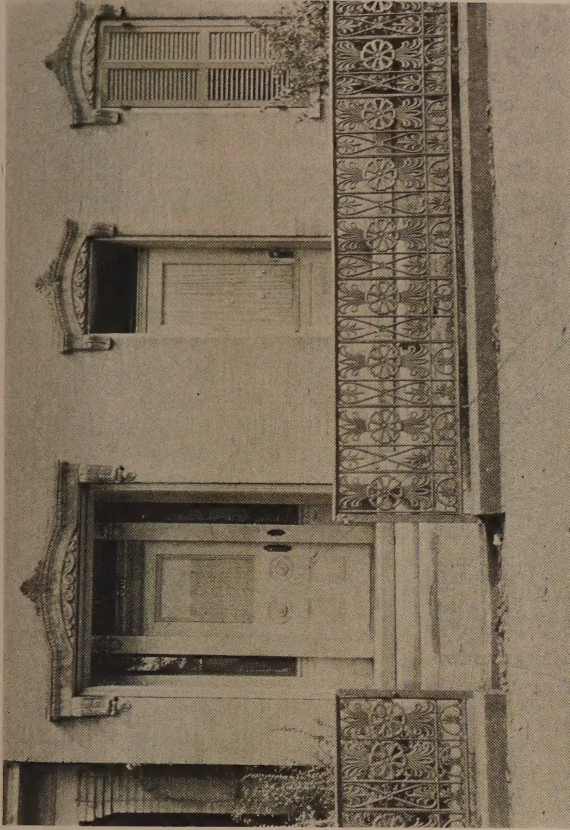
The climax of ornamental cast-iron work was reached by Ohio iron-workers, when they applied their art to certain distinctly architectural features, notably, porches and doorways. During this period the porch roof was supported on a light framework of cast iron of open, ornamental design. Sometimes these were combined with the iron work of the porch railing. These were occasionally geometrical designs, but more commonly of interesting vine patterns. Frequently, in case of small porches, or canopies over doorways, the cornice and roof were also of cast iron. An example of this is to be seen in an old house in Marietta, shown here in photograph. This forms a very graceful sheltering feature, and when seen with its covering of vines, does not seem inappropriate. The design is expressive of the material out of which it is made, and is of good proportions. A more pretentious entrance porch is that on an old house in Delaware. This is a feature complete in itself, and made entirely of open-work cast iron, cast in sections, and bolted together. It is evidently a stock design, for the same doorway is to be found in other towns of central and southern Ohio. This porch is well-proportioned and contains many exquisite details, especially the Greek motives to be seen in the crowning members of the cornice. However, it suggests by its proportions and motives that it is a cast-iron interpretation of a wooden-porch motive, and therefore lacks those



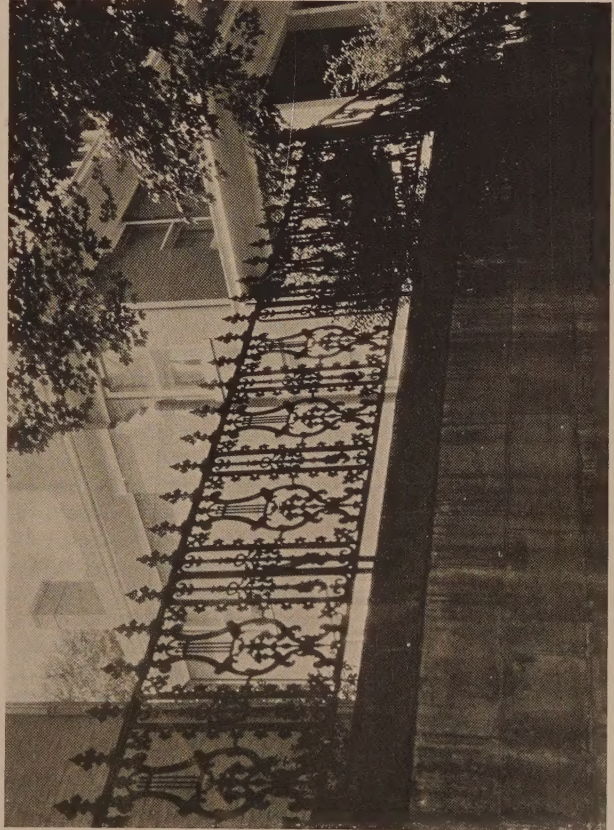
The climax of ornamental iron work in Ohio. Doorway of an old house in Delaware, Ohio. Greek revival period.



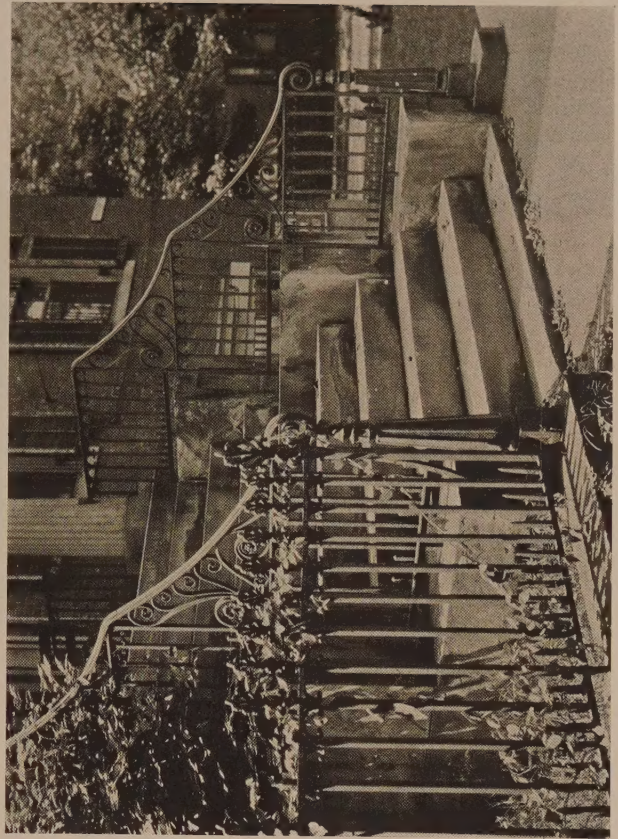
A section of porch railing on a house in Marietta, Ohio, showing cast-iron sections used in repetition and riveted to wrought-iron rails at top and bottom.



An ornamental cast-iron fence of the Greek revival period, in Chillicothe, Ohio, made up by the use of two sections, alternating. That this was an age of cast iron in building may be seen in the cast-iron lintels of the doorway and windows.



Ornamental railing on top of a retaining wall, Marietta, Ohio, showing two different cast-iron sections, used alternately to give decorative effect. The rails and posts only are of wrought iron.

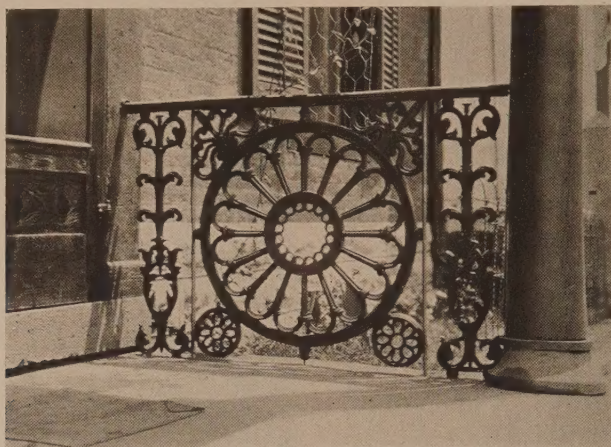


Step hand-rail and fence. The Reeves-Woodrow-Fullerton house, Chillicothe, Ohio. An unusually fine piece of wrought-iron work combined with cast-iron posts and finials.

intrinsic qualities we expect to find expressed in a structure of iron.

Although this ornamental cast-iron work leaves much to be desired, it cannot be denied, however, that it has great possibilities, and one studies it with a feeling of regret that the craftsman of the period did not continue its use until

its best qualities were fully developed, and to have found perhaps more appropriate uses. In our present-day work, with our unlimited facilities for working metals of all kinds, the craftsman with vision may study, with profit, some of these experiments of the pioneer workers in the Middle West.



A section of porch railing, Delaware, Ohio, showing a late florid type of cast-iron work.

“Hard Woods” and “Soft Woods”

Forest Products Laboratory, U. S. Forest Service, Madison, Wisconsin

NO definite degree of hardness divides the “hard woods” from the “soft woods.” In fact, the only absolute distinction which can be made between the two classes of wood has nothing to do with their hardness or softness. The terms are simply one of several pairs of popular descriptive names in use for referring to trees of the two great groups, botanically known as the Angiosperms and the Gymnosperms.

The botanical distinction between these groups, which is that the seeds of the Angiosperms are enclosed in pericarps and the seeds of the Gymnosperms are exposed, is in itself of no commercial importance. But there are numerous general differences which make it necessary for wood users constantly to refer to Angiosperms and Gymnosperms by some name or other. Differences in structure, appearance, properties, size, and quality of the timber and in regions of growth keep the woods of the two groups more or less separated, from the logging operation down through the manufacturing process to the ultimate use.

The terms “hard woods” and “soft woods” are the most generally accepted popular names for the two classes of trees, although they are perhaps the most misleading. It is true that many Angiosperms, such as oak, hickory, sugar-maple, and black locust, are notably hard woods, and that many Gymnosperms, such as most pines and spruces, are rather soft woods. But there are a number of outstanding exceptions. Basswood, poplar, aspen, and cottonwood, which are all classified as hard woods, are in reality among the softest of woods. Long-leaf pine, on the other hand, is about as hard as the average hard wood, although it is classified as a soft wood. Yew, another so-called soft wood, is about three times as hard as basswood and considerably harder than most oaks.

Another common name for the Gymnosperms is “conifers.” This is more accurate than “soft woods,” as all native Gymnosperms except the yew are cone-bearing trees.

Gymnosperms are sometimes spoken of as “the evergreens” and Angiosperms as “the deciduous trees,” from the fact that most trees in the former group keep their foliage the year round, and most of those in the latter group lose their leaves during the fall or winter months. The exceptions among the soft woods are bald cypress and tamarack, which have no leaves in winter. With hard woods it is more or less a matter of climate. Many tropical hard woods are green the year round.

The most accurate popular descriptions of the two groups are “trees with broad leaves” for the Angiosperms, and “trees with needles or with scale-like leaves” for the Gymnosperms. These are the definitions generally given by dictionaries for hard woods and soft woods, or hard woods and conifers. They divide woods almost exactly in accordance with the botanical grouping. The few Gymnosperms, such as the ginkgo, which have broad leaves, are not native to this country.

A difference in cellular structure which has been found to exist between the commercial Angiosperms and Gymnosperms is a very reliable means of distinguishing between the two groups, the hard woods being called the porous and the soft woods the non-porous woods. The term “porous” refers to the presence of certain comparatively large open-end cells or pores in the wood, in addition to the small closed-end cells, or fibres. These large specialized cells are found in practically all Angiosperms, their function being to conduct sap from the roots to the leaves. The Gymnosperms have developed no pores for this purpose, but use their fibres to elevate sap.

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Editorial and Other Comment

CHARLES SCRIBNER'S SONS announce with regret the retirement of Mr. James B. Carrington from the editorship of ARCHITECTURE. For some forty years Mr. Carrington has been a member of the Scribner organization. During a large part of that time he was on the editorial staff of *Scribner's Magazine*, and when ARCHITECTURE became a Scribner publication he was the logical one to take over the direction of its editorial conduct. Mr. Carrington has drawn freely upon his store of energy, enthusiasm, and creative ability in recent years—so freely that his health now demands more of its share of attention. Though retiring from the editorial chair, Mr. Carrington will not sever his connection with the house of Scribner, with which he has been so long associated.

The editorship of ARCHITECTURE passes into the hands of Mr. Henry H. Saylor. Trained for the profession of architecture at the Massachusetts Institute of Technology, under the great French designer, Desiré Despradelles, he served his drafting apprenticeship in Philadelphia with Walter Cope, of Cope & Stewardson, and with Edgar V. Seeler. Though practising on his own account intermittently thereafter, Mr. Saylor soon found himself turning toward the journalistic side of architectural work, editing *The Architectural Review*, of Boston, and later *House and Garden and Country Life*. During the period covering the editorial direction of the latter periodicals, whose purpose was to spread a wider knowledge of architectural principles among laymen, he found time to write a number of books upon various phases of domestic architecture and its setting. His training and practice as an architect and his rather comprehensive experience with both profession and public should equip him well for the editorship of ARCHITECTURE.

Miss Scott, whose connection with ARCHITECTURE dates from Vol. I, No. 1, and who personifies the magazine to a wide circle of architects, will of course continue her efficient work upon the editorial staff.

Beginning with the November issue, editorial plans now in process of development will be put into effect, through which it is believed that ARCHITECTURE will approach even more closely to the ideals that should characterize The Professional Architectural Monthly.

James B. Carrington

A Personal Footnote

THE profession will learn with deep regret that J. B. Carrington is retiring from the editorial chair of ARCHITECTURE, a post he has held with distinguished success since the house of Scribner acquired the publication. Just prior to that event he conducted "The Field of Art" in *Scribner's Magazine*, that versatile architect Russell Sturgis being his immediate predecessor and Royal Cortissoz his successor in a brilliant triad.

Under the guidance of J. B.—as his friends call him when they do not say "Jamie"—ARCHITECTURE has reflected the solid character, the broad tolerance, the catholic taste of the modest gentleman who has directed its destinies. His wide knowledge of and sympathy with all the arts of design had peculiarly fitted him for his ultimate relations with the mother of them all. Of all the many things he has done in his life and done so well, there can be few upon which he may look back with more satisfaction than to the editorship of one of the ablest architectural periodicals in the world. The pitfalls for the feet of the editor of a technical journal are many, and infinite tact and the most delicate discretion are needed in dealing with our kittle profession; it is enough to say of J. B. in this connection that he never even stumbled.

There are some men who, although one's contacts with them when summed up seem surprisingly slight, one feels one knows very well indeed; that is my feeling about J. B. I have known him as time goes many years, but I have seen far less of him than of many men I feel I hardly know at all. The reason for the deeper impression is to be found in the personality of the man himself. He is so genial, his grin is so kind and yet so keen; transparently sincere, earnest without gloom, capable, thank God, of flaming enthusiasms, loyal and patient; his tolerance is a part of his genial philosophy of life. We know him down at the Salmagundi Club, which he has served in many capacities for many years, as a jolly companion, a firm friend of his fellow artists, an artist himself who can be depended upon to say the graceful word that needs saying, or for wise or witty verse to give distinction to club functions.

He is an amateur of photography in the Gallic sense of the word and of notable skill in its practice. I shall not soon forget an evening at the Salmagundi when J. B. gave one of the lantern-talks for which he is famous. An architect becomes pretty well inured to that sort of thing—but J. B.'s show was not the usual thing at all. The pictures were all his own, beautifully chosen and composed, exquisite in values, full of interest, whether up on the quiet banks of the Bronx in midwinter, or taken in the rain, at night, in the middle of the streaming street, with skidding taxis grazing the tripod protected only by the devoted J. B.'s umbrella, the police uncertain whether or not to run him in on a charge of dementia—and with them the simplest, friendliest flow of comment and anecdote and technical explanation—a most human performance by a man obviously and emphatically human, loving his fellows and being loved in return.

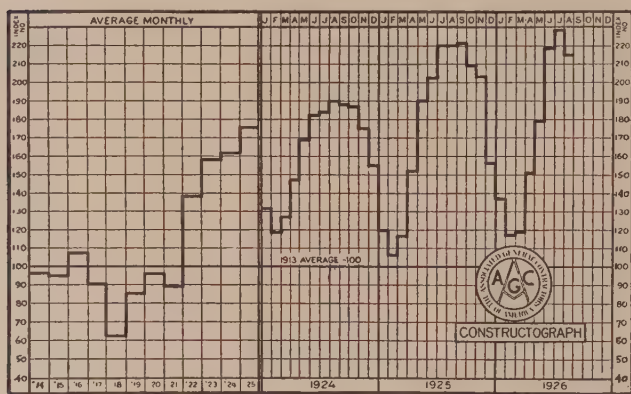
I would not have these notes sound as though we had lost him; but it is a pleasure to find an occasion to testify to the qualities of one's friend while he is still with us; post-mortem eulogy, for which that sort of thing is usually reserved, is rarely enjoyed by its object and then only when there has been a little mistake. We understand that he intends to spend much of his time at his place in the country, although retaining touch with the famous publishing house he has been identified with for so many years.

Some time ago he undertook the painting of his house, fell off the ladder and was severely injured; all his friends will join me in the affectionate adjuration: "Dear J. B., please keep off the ladder! We need you in the world."

H. VAN BUREN MAGONIGLE.

The Building Outlook

ALTHOUGH building construction in the aggregate seems to be keeping abreast of the records established in 1925, there is evidence here and there of a certain tightening up of the slack. It appears extremely unlikely that we are facing a slump in building operations—the broad outlook over American business in general reveals no signs of that. The usual decrease from the peak of August and September, a regular occurrence year after year, as shown by the graphic charts, is to be expected. This decrease should continue, in the natural course of things, until we reach the bottom of the curve in February or March next. Although the development of skill in winter building, with



our constantly improving facilities for overcoming the handicaps of freezing weather, should tend in time to help flatten out the present peak and valley of this curve, the vast amount of small country work, so greatly curtailed in cold weather, tends to offset the effect of our greater winter activities in the cities.

Though building construction bids fair to continue the fast pace of this era of prosperity, there is abundant evidence that the builder is demanding more and better work for his money. The day of unquestioned spending is coming to an end. The mad rush to finish apartments, hotels, loft buildings, stores, at any cost, knowing that the rentals could easily be made large enough to carry the load, is slowing down. We have by no means caught up in our building shortage, but we are certainly gaining upon it. And the investment builder is tightening up his purse-strings.

This is a healthful condition of things. Good architecture is not readily produced in an extreme bull market; the pressure for speed to cash in on the top price of leases leaves too little opportunity for study and re-study of the problem. Now that the investor is watching his money more closely, taking the long view ahead instead of the short one, asking for construction that will lower maintenance costs and design that will hold its own in a competitive market, the architect is going to have his chance.

The Cycle of Style

JUST as we are becoming accustomed to the white walls and furniture of hospital rooms, along comes the executive secretary of the American Hospital Association with a

recognition of the therapeutic value of color in the sick-room. His informal recommendations include walls of soft grays, greens, or even pink. He goes farther than that, in suggesting the need of perfumed ventilation, designed to offset the fumes of chloroform and ether.

Some one will soon be doing something radical to the modern bathroom.

Where the Architect May Well Lean Backward

THERE is a practice in some danger of establishment among architects that needs a word of caution. The publication of a book illustrating the work of an architectural office is in itself a perfectly harmless thing, unassailable in the matter of ethical procedure. There is certainly no objection to the judicious distribution of a portfolio of photographs among clients and prospective clients—and the printed book is nothing more than that. It is when such a book carries the advertisements of contractors and manufacturers that it enters the borderland of questionable ethics. The architectural profession prides itself, and with considerable justification, upon the high plane of its practice relationships. An architect occupies a position as adviser to the client and judicial court of appeal in the matter of the client's contract with the builder, that is unique. That position has been maintained and can continue to be maintained only through the most rigid observance of a strict ethical code. Accepting money from a contractor or material man, for advertisements in a book featuring the architect's work, even at the advertiser's earnest solicitation, and granting that he is receiving full value for his money, approaches too nearly the appearance of a hold-up to be allowed to become an accepted custom.

Book Reviews

READY WRITTEN SPECIFICATIONS. A Compendium of Clauses for Direct Use in Architectural Specifications. By LEICESTER B. HOLLAND AND HARRY PARKER. John Wiley & Son, New York.

"In office and in atelier the young man has been trained in drawing, in designing, and in detailing; his maiden contract drawings are familiar work to him. He may have studied theoretical construction in some great school of architecture, or even done practical superintendence as a clerk of works, yet not one young architect in a hundred has ever had real instruction in the actual preparation of specifications. In his emergency he does what all other architects have done, he begs from some friend of older practice the specifications of some other undertaking as like in character to his own as he can find, and then cuts, pastes, writes in, and crosses out as well as he knows how, to make a patchwork that will apply, more or less well, to the structure he has planned."

We commend this book for its practical usefulness. It should help many offices to simplify the specification complexes. It is a storehouse of specification material, based on experience.

THE CHURCHES OF ROME. By ROGER THYNNE. E. P. Dutton & Co., New York.

This would be an excellent small book to put in your bag for an Italian journey and it makes an interesting reference for the home library. The text deals with the architecture, history, and art of thirty-four churches, including, of course, a special consideration of St. Peter's. There are a number of excellent half-tone illustrations.

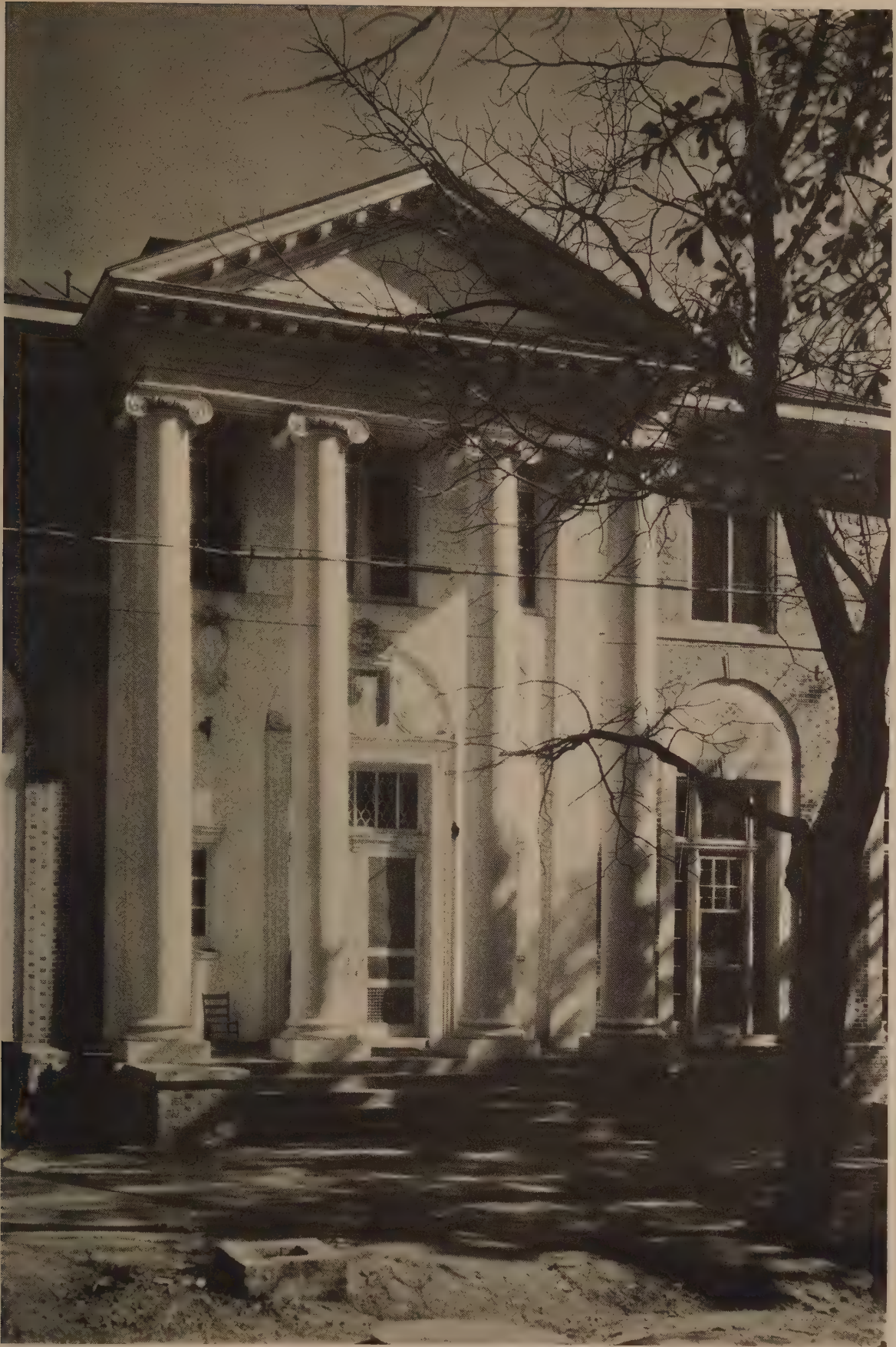
DUTCH ARCHITECTURE OF THE XXTH CENTURY. Edited by J. P. MIERIS, Director Bond of Netherland Architects, and F. R. YERBURY, Hon. A.R.I.B.A. With Photographs Specially Taken by F. R. YERBURY and an Introduction by J. P. MIERIS. Charles Scribner's Sons, New York.

Perhaps the most interesting and instructive things in this attractive book are the Housing Blocks, the Dutch solution of the apartment or multiple-family house.

They too have had an acute housing problem and their architects have met it with skill and originality.

The volume contains also examples of farm-houses, schools, and business buildings and all of them are quite modern in design and treatment. There is little of the familiar and conventionally Dutch here. They have the modern touch and show that the Dutch architects are alive to the tendency to get away from traditional types.

In the use of brick the Dutch have always shown excellent taste. They have a decided preference for plain surfaces as a rule, though here and there ornament is used in strikingly aggressive ways.



DETAIL OF ENTRANCE, SMITH HALL, ALABAMA POLYTECHNIC INSTITUTE, AUBURN, ALA.

Warren & Welton, Architects.



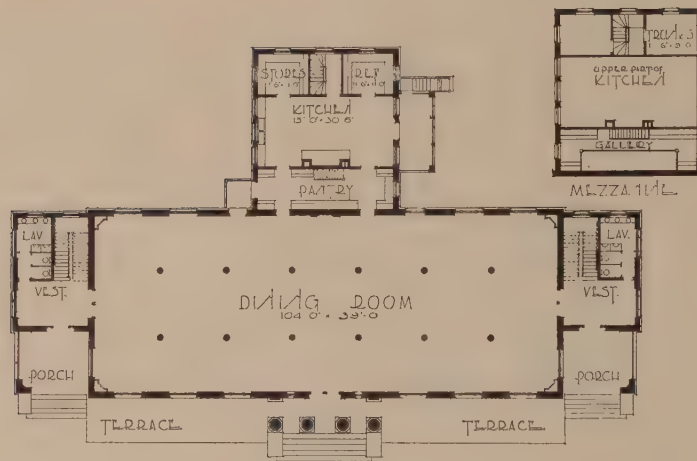
SMITH HALL, ALABAMA POLYTECHNIC INSTITUTE, AUBURN, ALA.

Warren & Welton, Architects.



SECOND FLOOR PLAN

0 10 20 30 40



FIRST FLOOR PLAN

0 10 20 30 40



BASEMENT & FOUNDATION PLAN

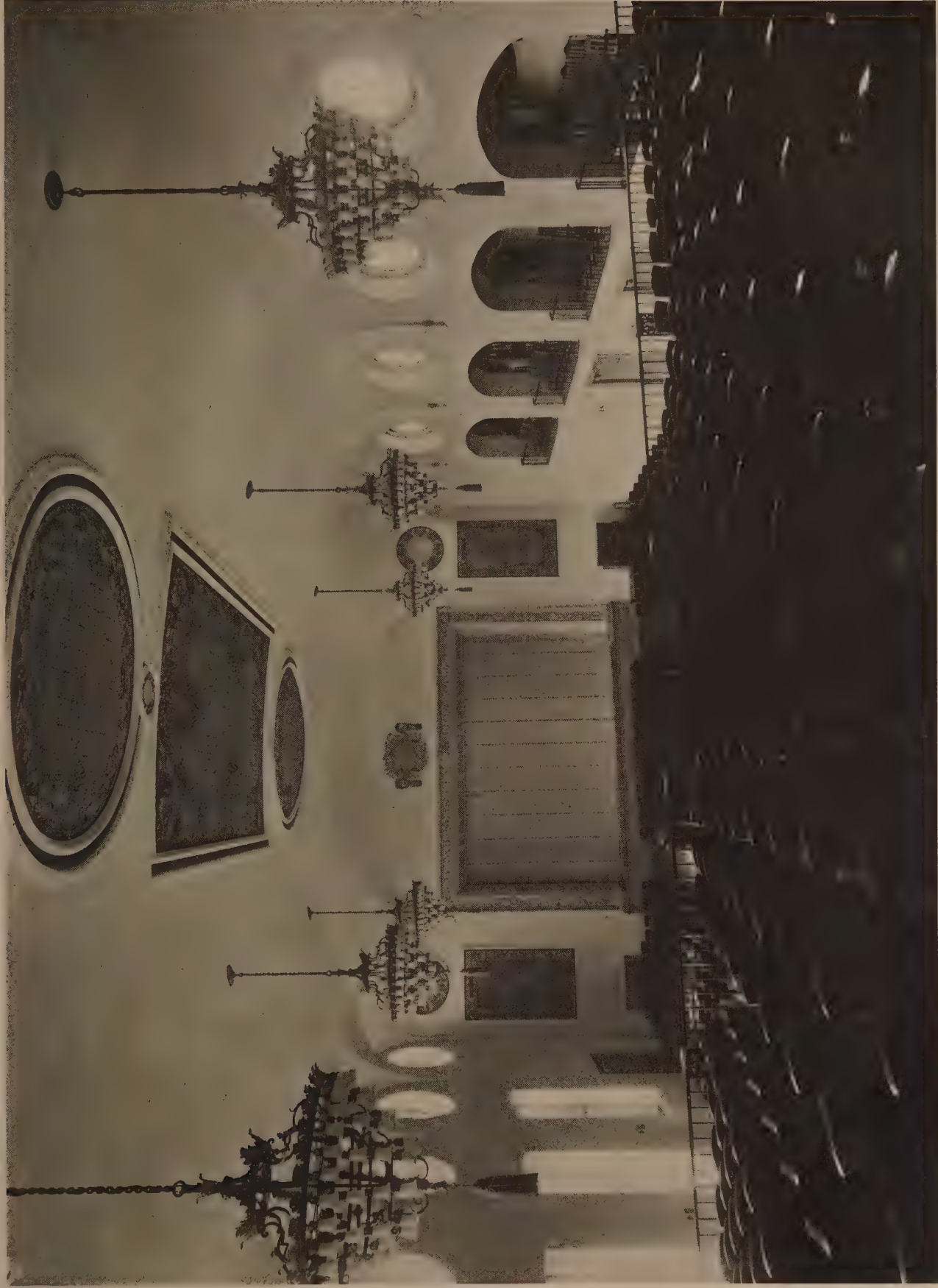
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FLOOR PLANS, SMITH HALL, ALABAMA POLYTECHNIC INSTITUTE, AUBURN, ALA.
Warren, & Welton, Architects.



WELLESLEY STUDENT-ALUMNÆ BUILDING, WELLESLEY COLLEGE, WELLESLEY, MASS.

Cram & Ferguson, Architects.



AUDITORIUM, WELLESLEY STUDENT-ALUMNÆ BUILDING, WELLESLEY COLLEGE, WELLESLEY, MASS.

Cram & Ferguson, Architects.



REAR OF BUILDING.



DETAIL, LOGGIA.

Cram & Ferguson, Architects.

WELLESLEY STUDENT-ALUMNÆ BUILDING, WELLESLEY COLLEGE, WELLESLEY, MASS.



DETAIL OF REAR WING.



FOYER.



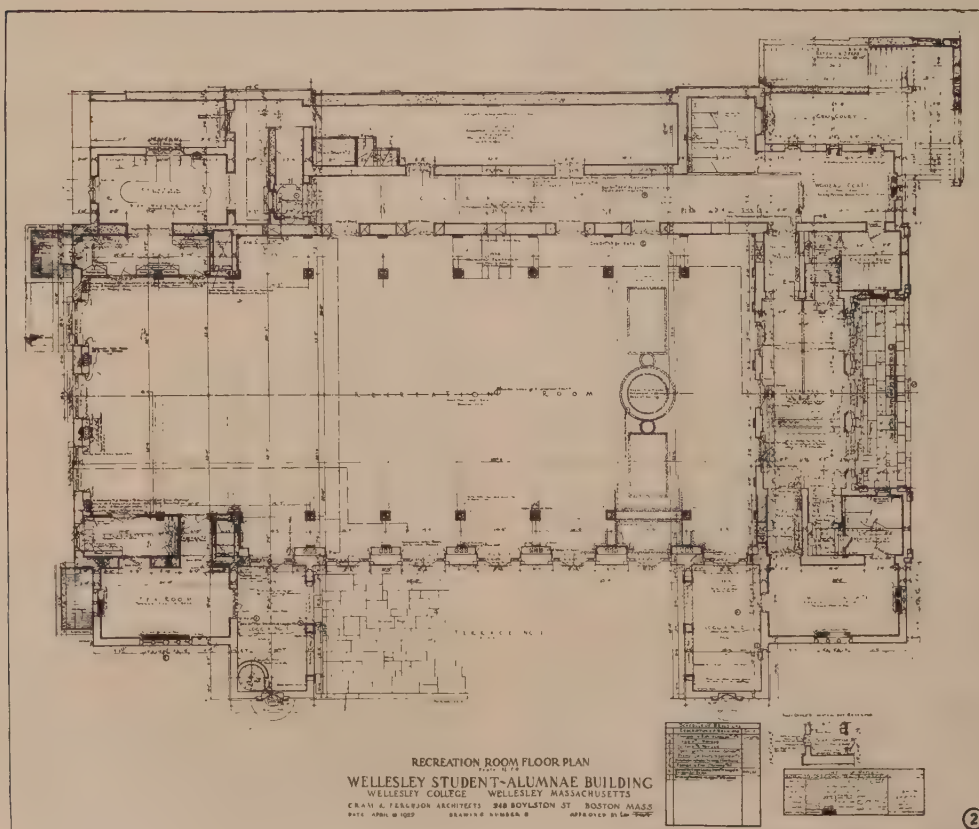
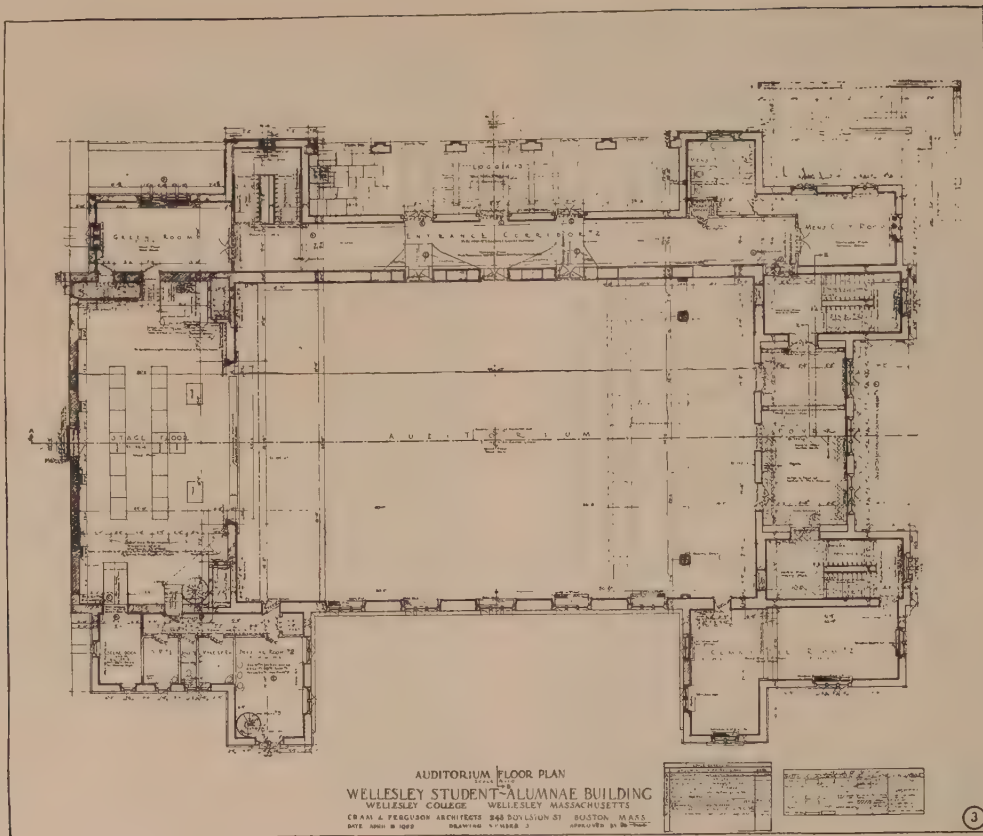
LOBBY, RECREATION FLOOR.



RECREATION-ROOM.

Cram & Ferguson, Architects.

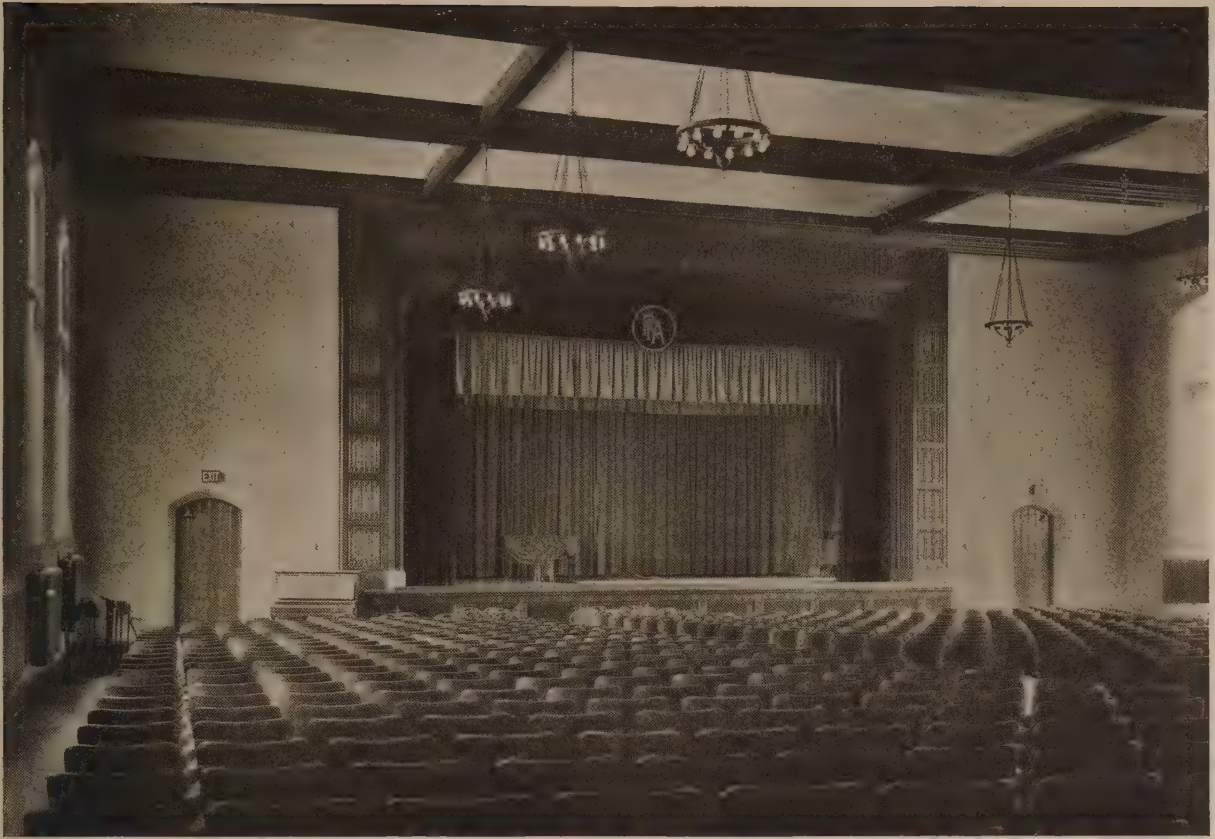
WELLESLEY STUDENT-ALUMNÆ BUILDING, WELLESLEY COLLEGE, WELLESLEY, MASS.



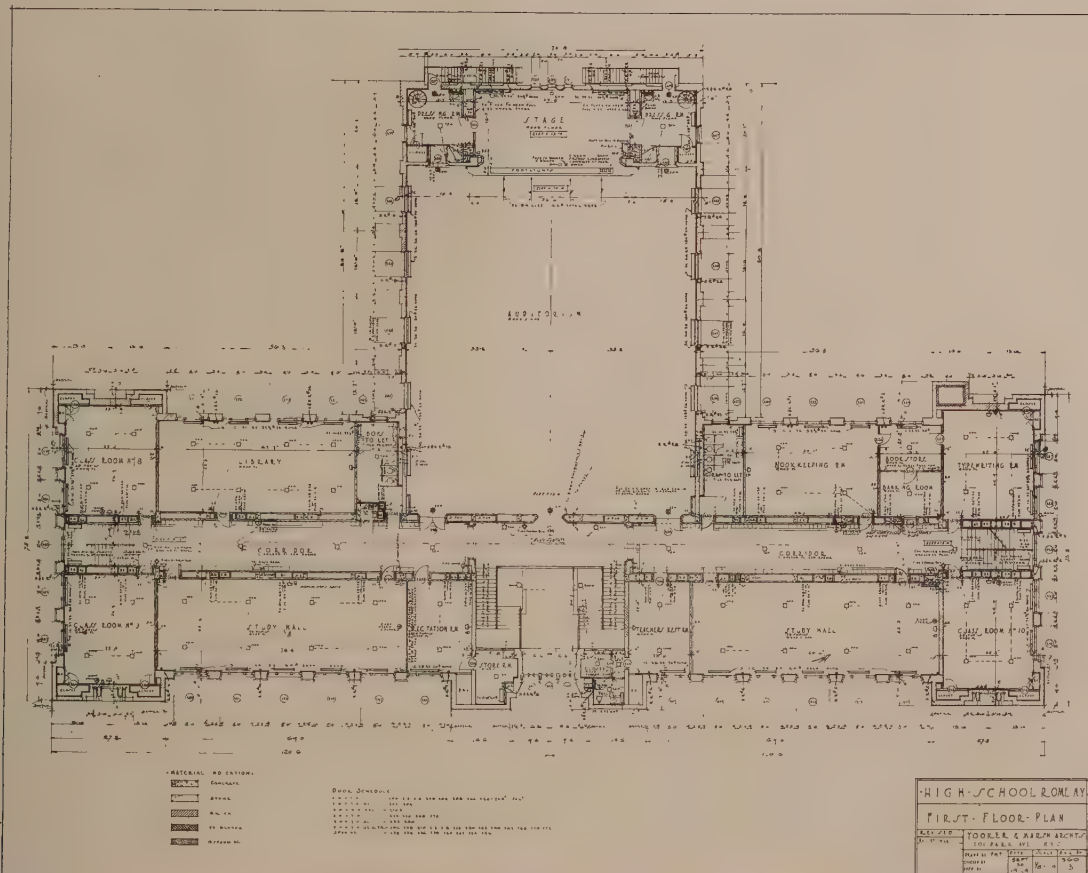


ROME FREE ACADEMY. ROME, N. Y.

Tooker & Marsh, Architects.

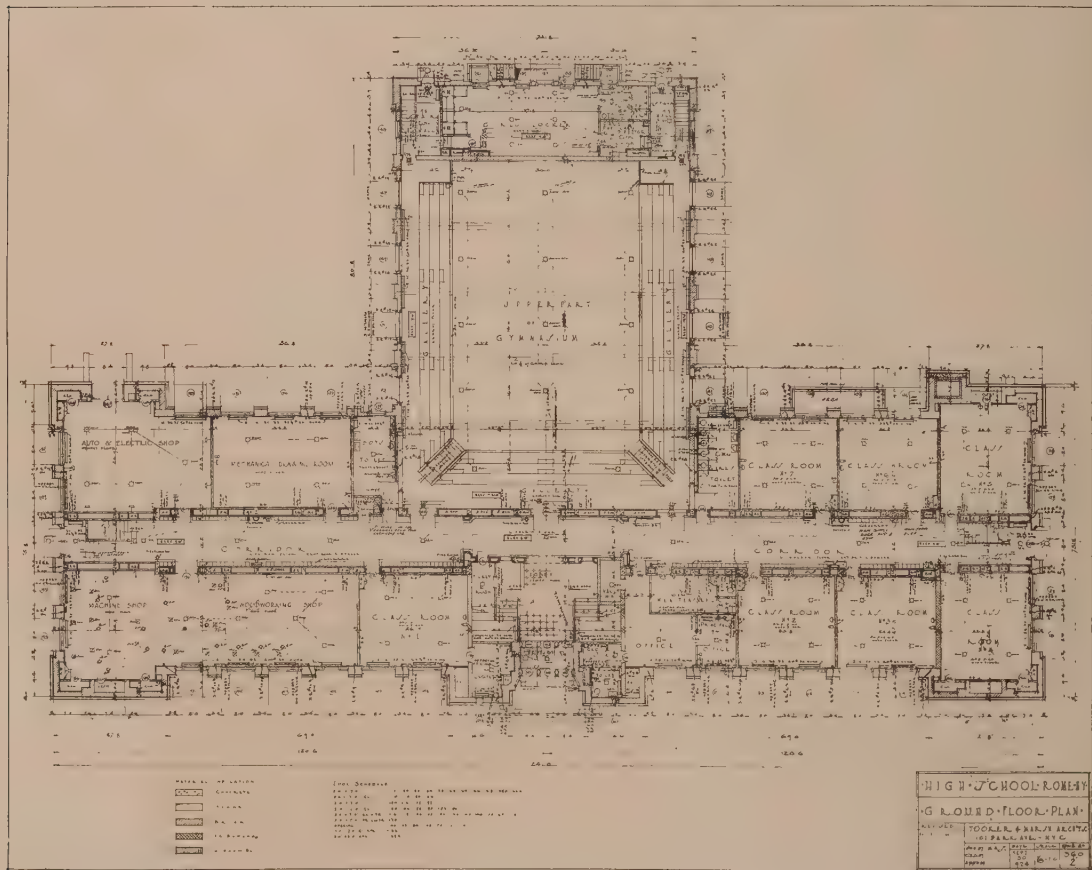
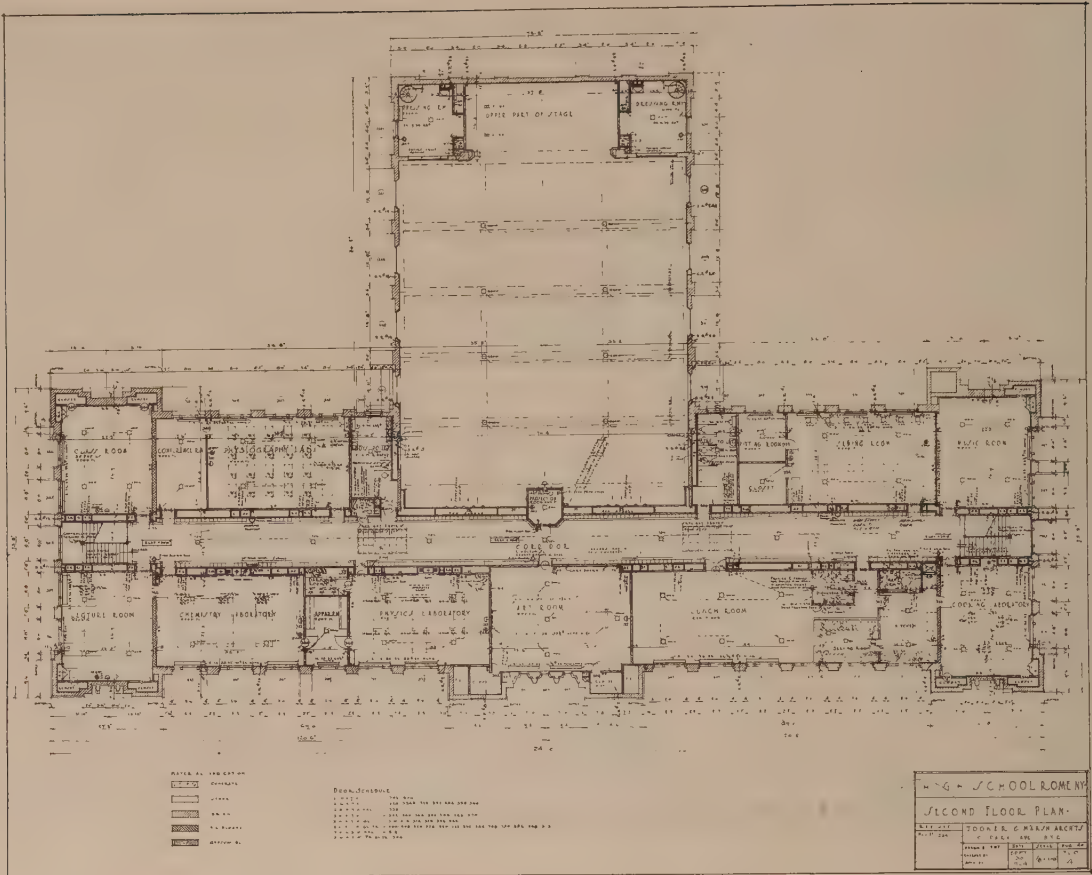


AUDITORIUM.



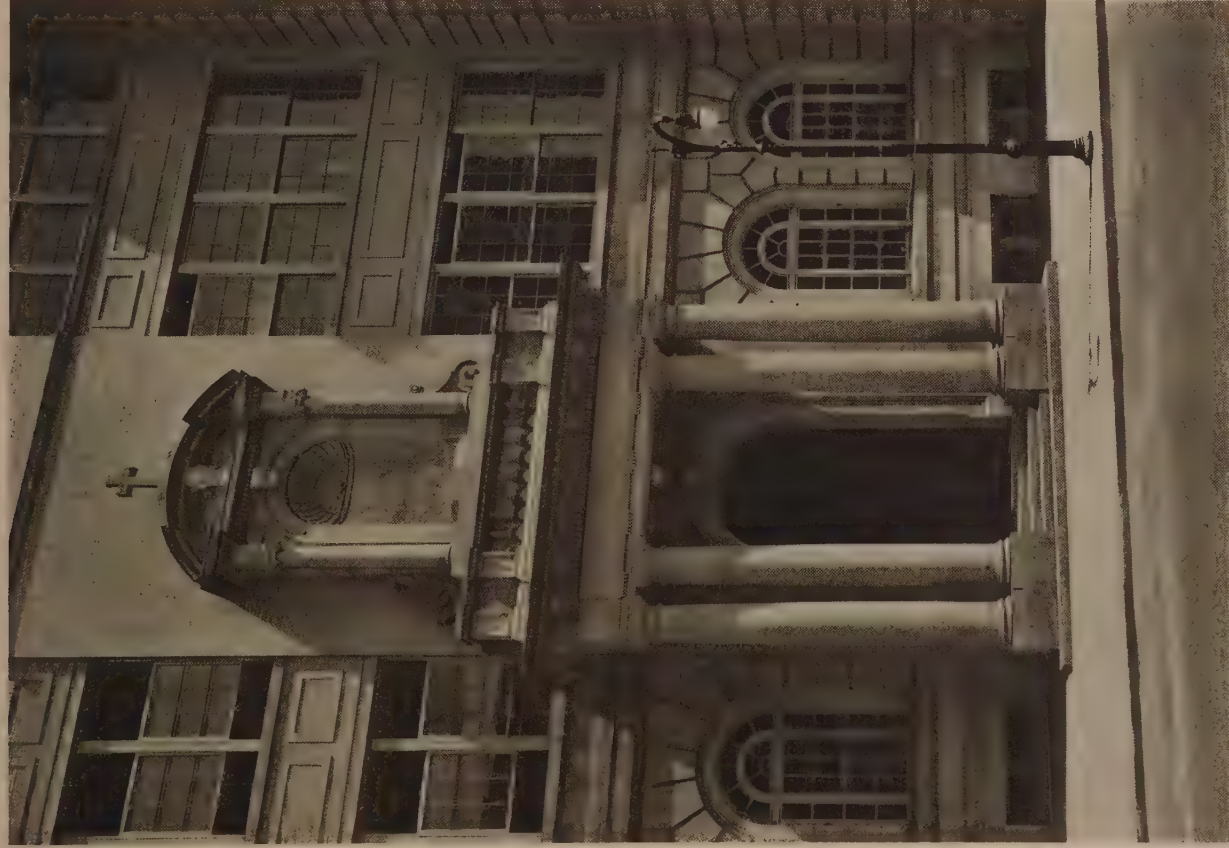
ROME FREE ACADEMY, ROME, N. Y.

Tooker & Marsh, Architects.



FLOOR PLANS, ROME FREE ACADEMY, ROME, N. Y.

Tooker & Marsh, Architects.



DETAIL, MAIN ENTRANCE.

ST. JEAN BAPTISTE SCHOOL, NEW YORK.



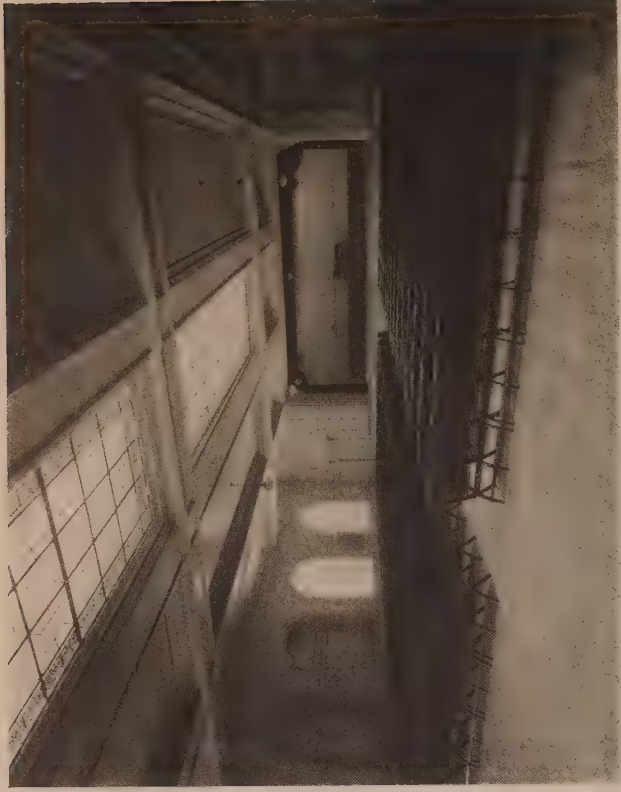
MAIN CORRIDOR.

Robert J. Reiley, Architect.

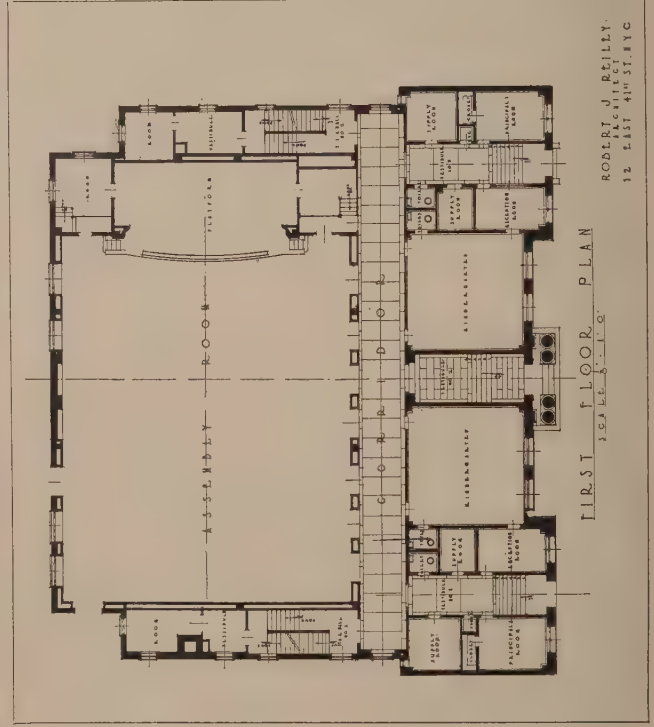
OCTOBER, 1926.



AUDITORIUM, TOWARD CORRIDOR.

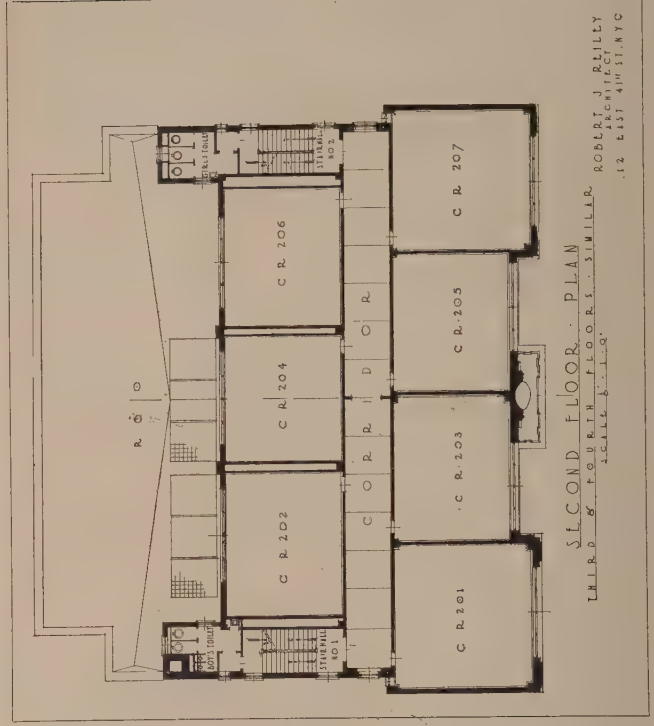


AUDITORIUM, TOWARD STAGE.



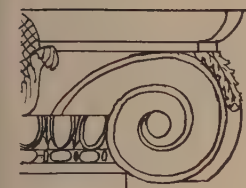
FIRST FLOOR PLAN

ROBERT J. REILEY,
ARCHITECT.
12 EAST 41ST ST. N.Y.C.



SECOND FLOOR PLAN

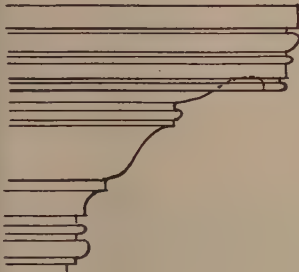
ROBERT J. REILEY,
ARCHITECT.
12 EAST 41ST ST. N.Y.C.



CAP



TRANSOM BAR



CORNICE



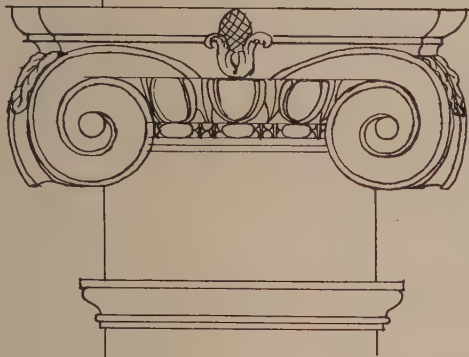
ARCHITRAVE



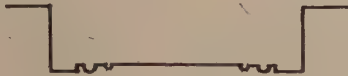
COLONIAL ARCHITECTURE
OF
VIRGINIA

MAIN ENTRANCE DOOR
HOUSE AT PRINCESS ANNE & AMELIA STREETS
FREDERICKSBURG, VIRGINIA
CIRCA 1790

MEASURED & DRAWN ~
BY
ALBERT P. ERB
Washington D.C.



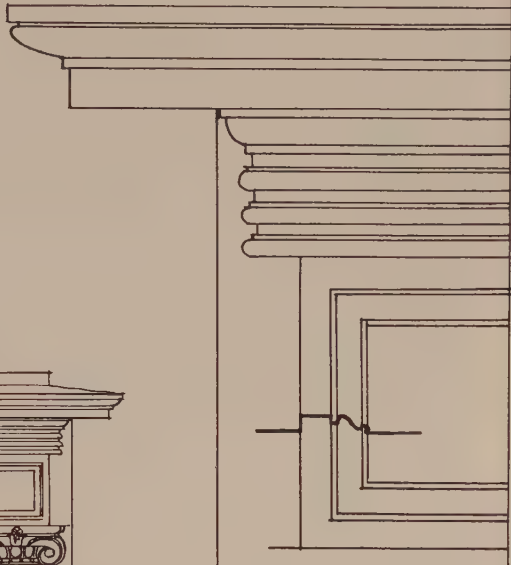
PILASTER
CAP



PILASTER



ELEVATION



CORNICE



TRANSOM BAR

COLONIAL ARCHITECTURE
OF
VIRGINIA

SIDE ENTRANCE DOOR
HOUSE, AT PRINCESS ANNE & AMELIA STREETS
FREDERICKSBURG, VIRGINIA
CIRCA. 1790

MEASURED & DRAWN ~
BY
ALBERT P. E. B.
Washington, D. C.



MOHAWK GOLF CLUB, SCHENECTADY, N. Y.

Beverly S. King, Architect.



CLUB-ROOM, MOHAWK GOLF CLUB, SCHENECTADY, N. Y.

Beverly S. King, Architect.



CLUB-ROOM, MOHAWK GOLF CLUB, SCHENECTADY, N. Y

Beverly S. King, Architect.



DETAIL, ENTRANCE, LOCKER HOUSE.



MAIN ENTRANCE TO CLUB HOUSE.

Beverly S. King, Architect.

MOHAWK GOLF CLUB, SCHENECTADY, N. Y.



CLUB HOUSE.



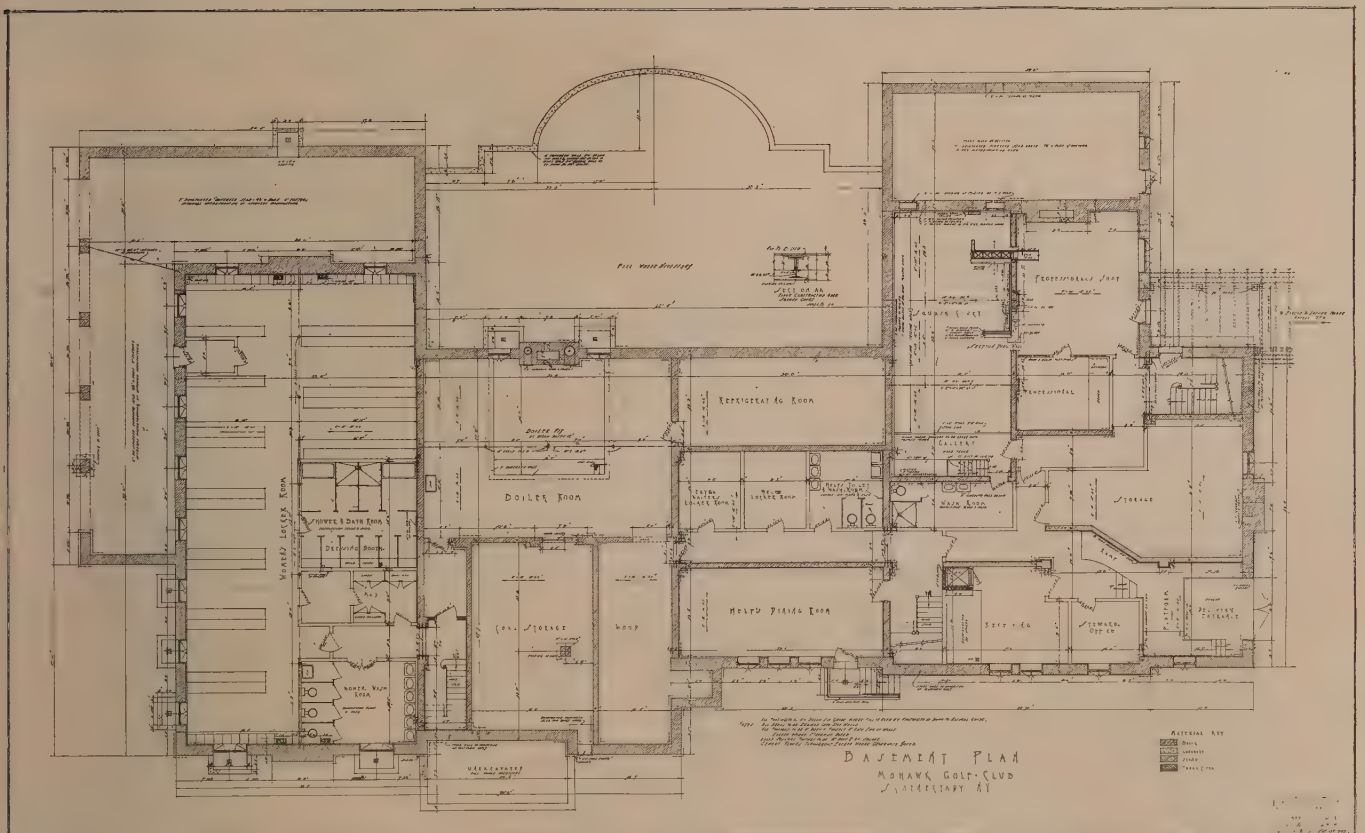
LOCKER HOUSE.

MOHAWK GOLF CLUB, SCHENECTADY, N. Y.

Beverly S. King, Architect.

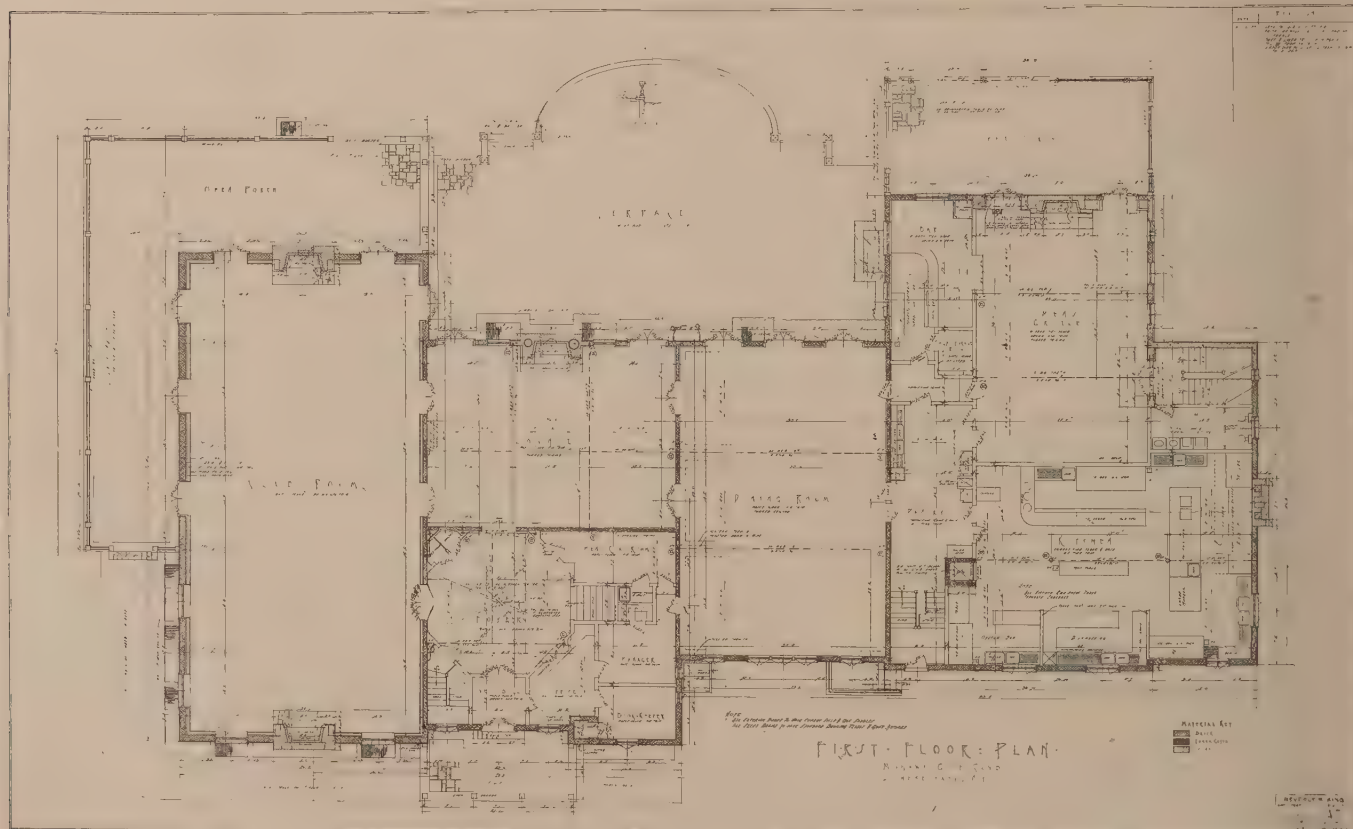
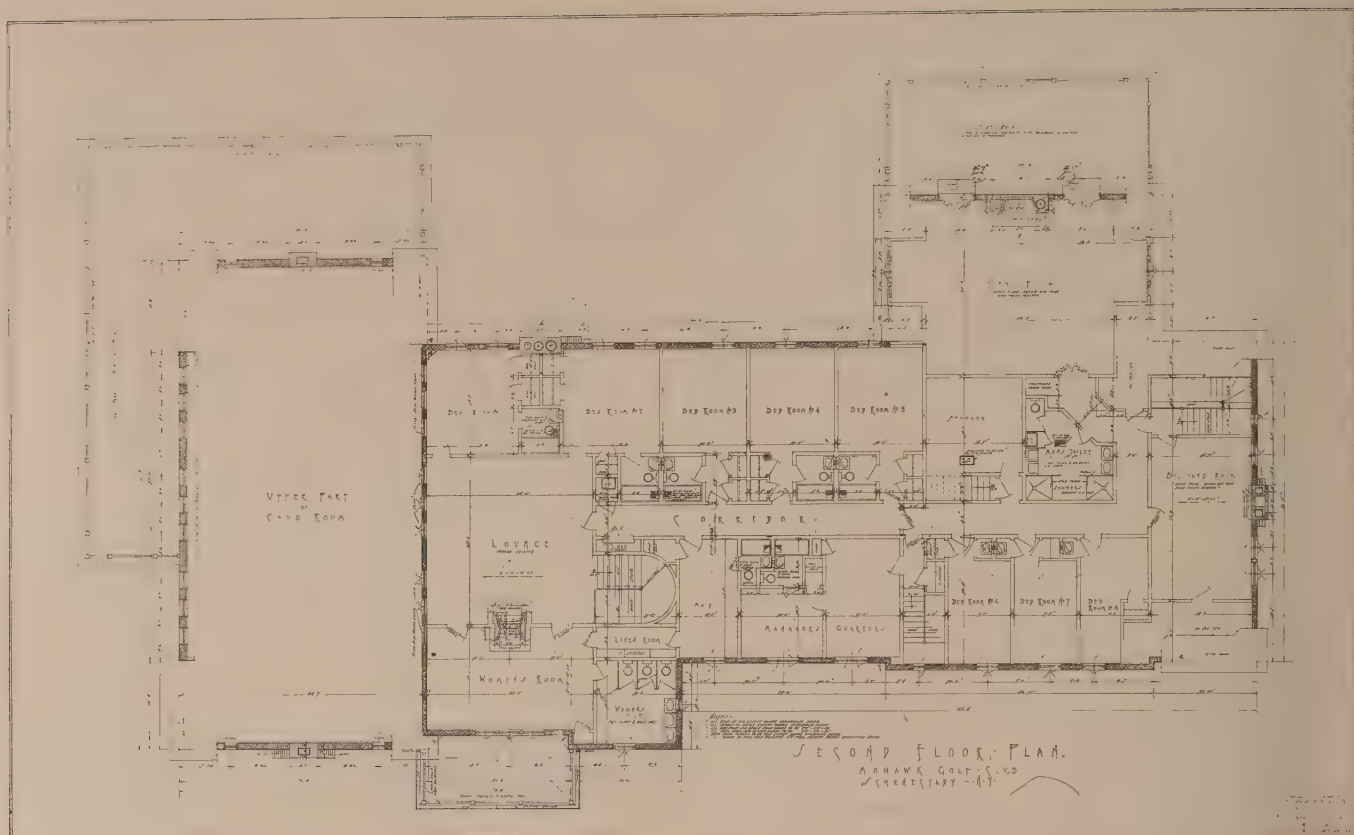


OPEN PORCH, CLUB HOUSE.



MOHAWK GOLF CLUB, SCHENECTADY, N. Y.

Beverly S. King, Architect.



MOHAWK GOLF CLUB, SCHENECTADY, N. Y.

Beverly S. King, Architect.

The Choice of Wall-Construction

By Theodore Crane

Associate Professor of Building Construction, Yale University

TO select the most desirable type of wall-construction we may employ a method of procedure similar to that used in the choice of a floor-construction. In this case, however, we deal rather with materials than with systems.

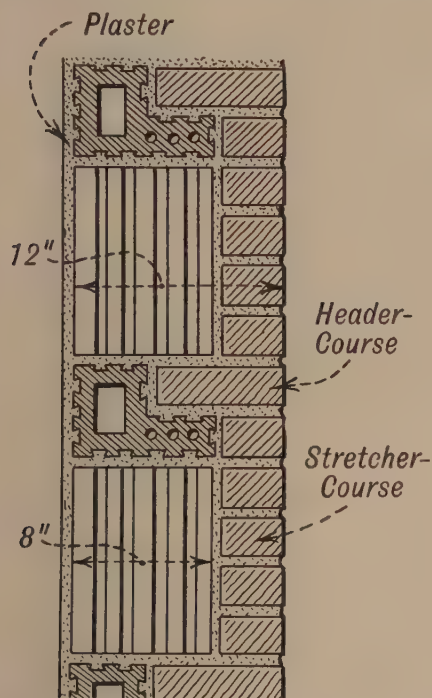
Exterior walls can be divided roughly into two classes, namely, bearing and non-bearing walls. The latter can be divided again into two subdivisions; panel-walls, those not over one story in height, and curtain-walls, those which extend through more than one story. Every type of wall should have sufficient bearing capacity and stability to support the imposed loads. Each vertical layer of the wall, such as the interior finish or furring, should be adequately joined together, or bonded, and the wall as a whole should be built of such materials, and in such a manner, as to best resist disintegration through the influence of the elements.

Second only to the function of a wall as a structural unit, and as an adequate inclosure, its appearance should be considered. This latter requirement is affected not only by the choice of materials and architectural treatment, but by the expression, or suppression, of structural features. In the design of floors a construction often owes its success to the fact that it can be easily hidden and occupies a minimum thickness. Floors are, after all, merely the necessary equipment of a building and designed to be walked upon or, at most, decorated. Walls likewise serve their utilitarian purposes, support loads, and exclude cold air and they too may be decorated. But that is not all; together with the columns and pilasters they should express the structural feeling of the building. It may, or may not, be desirable to express the character of the material in the treatment of

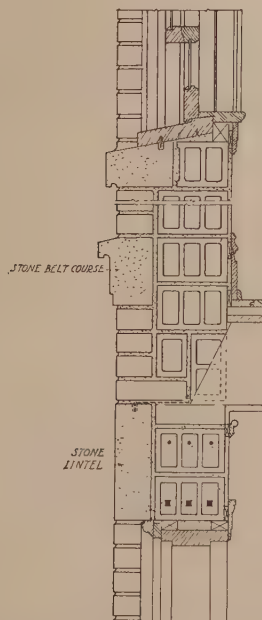
detail and the choice of exterior finish, but the lines of a structure should be such as to properly employ the material of which it is built. This applies to our problem of wall-construction to the extent that those materials most likely to give satisfaction architecturally are usually the most appropriate structurally.

The third consideration, following the structural and artistic requirements, and one which should go hand in hand with these, is economy. By this it is not meant to justify the niggardly attitude which begins to economize as soon as the utilitarian considerations have been satisfied, but rather a careful appreciation of relative cost and the spending of every dollar to the best advantage. Economy in wall-construction means both the choice of proper materials and the careful selection of suitable details to eliminate avoidable expense, still obtaining the required structural strength and architectural beauty. As in the case of floor-construction, every project is an individual problem, the final choice often being determined by local conditions governing the cost of materials and labor. It is possible, however, to analyze the subject to an extent that our final choice is greatly facilitated.

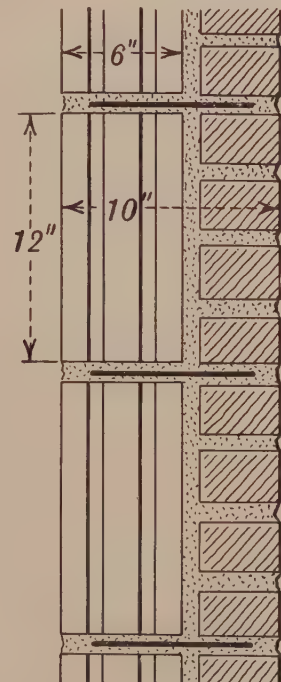
For the purpose of making a comparative study of the various types of wall-construction, let us consider that an exterior wall is composed of four divisions, or vertical layers: exterior finish, backing, furring, and interior finish. All exterior walls do not, of course, necessarily have four distinct layers; the exterior finish may be furnished by the backing, as is often the case in stone masonry, or the backing may also serve as furring, which is the usual construction



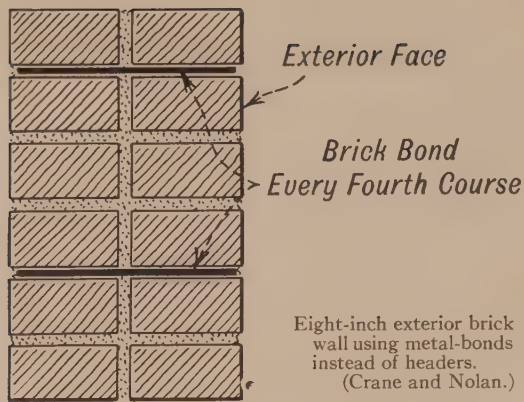
Four-inch brick veneer with interlocking hollow-tile backing. (National Fireproofing Co.)



Four-inch brick and stone veneer with hollow-tile backing. (The Hollow Building Tile Association.)



Four-inch brick veneer using metal bonds with hollow-tile backing. (Concrete Builders' Handbook, Crane and Nolan.)



for certain classes of work employing hollow terra-cotta wall-block. Likewise, a well-built concrete wall, having neither exterior finish, furring, nor interior finish, might, under certain conditions, be entirely acceptable. Yet even such simple construction must satisfy the fundamental requirements of an exterior wall; it must be strong enough, serve as an adequate inclosure, and have an acceptable appearance upon both exterior and interior.

As most combinations of materials, which could be considered for the exterior walls of so-called fire-proof buildings, have sufficient bearing capacity to carry the imposed loads, the structural design, except for walls subject to earth or water-pressure, is principally concerned with obtaining a durable construction, impervious to moisture, and with as low a factor of heat-transmission as it may be practicable to obtain. In the case of floor-construction, structural and economical requirements are the principal factors in determining our choice. For walls, however, good appearance is of primary importance and the artistic value of materials must be considered side by side with their structural advantages.

A satisfactory procedure in choosing the wall-construction for a particular building is to note all of the materials which would be appropriate for each portion of the wall and then, as in the case of floor-construction, to approach our final choice by the process of eliminating those materials which are structurally, artistically, or economically inferior. Of course the purely artistic qualities of a material, or construction, affect only the visible portions of a wall; the exterior and interior finishes. The structural requirements, however, are equally essential for all portions, and the weathering qualities of a stone may be a justifiable reason for its acceptance or rejection.

Having made a tentative choice of the materials most likely to prove satisfactory, the next step is to put them together: the construction must be designed so as to properly bond each element of the wall. An exterior brick-veneer can be attached to a terra-cotta backing by interlocking at every few courses, but this requires the use of a special terra-

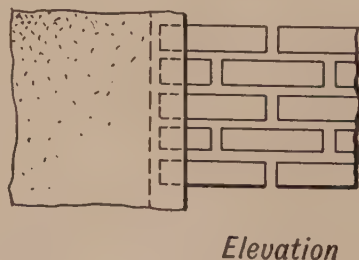
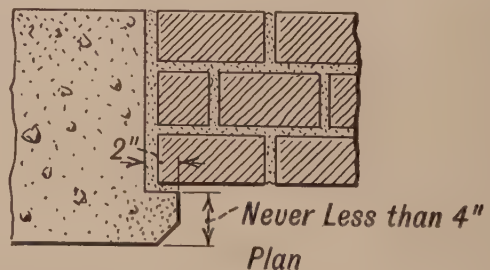
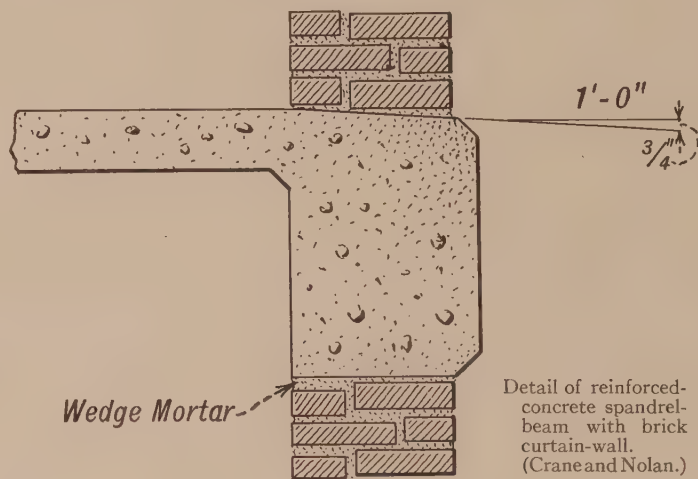
cotta block providing a recess to receive the brick. A common brick backing may be easily bonded in the same manner to a face-brick veneer, but the latter, over a concrete surface, necessitates the use of metal-bonds lying between the brick courses and imbedded in the concrete of the wall. That is, the most satisfactory choice of materials, alone, may not obtain the most desirable wall, for the construction must be studied as a whole and in relation to the other portions of the building; particularly as affected by the building-frame. By proceeding in this manner, it will soon become apparent that only a few combinations of materials are both structurally and artistically suitable. When relative cost is considered, our choice will become even more limited and preliminary estimates upon two, or three, of the more desirable combinations, ordinarily determine the choice quite definitely.

The character of the exterior and interior finishes is determined by the architectural treatment. Various kinds of natural or artificial stone, bricks or terra-cotta and a variety of stucco, or concrete finishes, embrace practically all the materials suitable for exterior use in fire-resistant

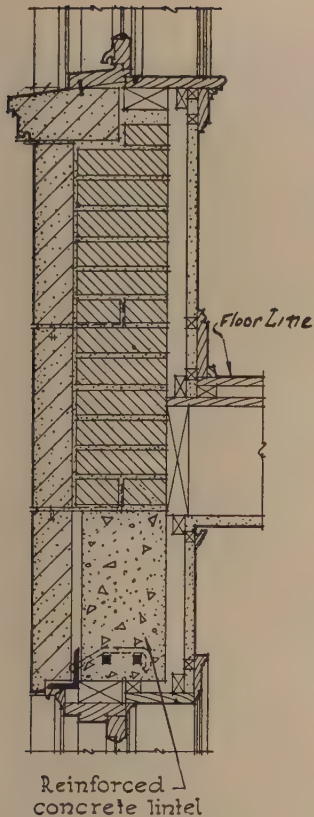
buildings. An expensive, quarried stone would ordinarily be used in the form of a four-inch veneer, with occasional bond-stones of about twice that thickness, extending into the body of the wall. Such construction requires a backing of terra-cotta, cement-block, or brick, to satisfy the structural requirements and, where either of the latter are used, some type of furring is usually necessary to provide insulation. A low-priced fieldstone may, on the other hand, cost less than either brick or tile

and, where used as the exterior finish, may serve equally well for the backing.

In making a comparison of cost, however, there is danger of basing a decision upon the prices of materials



Detail of reinforced-concrete wall-column at junction with brick panel-wall. (Crane and Nolan.)



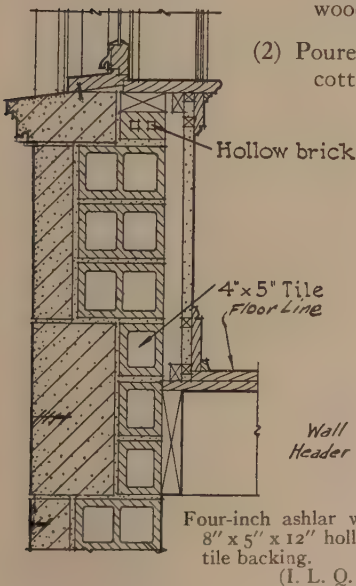
Four-inch ashlar with eight-inch brick-backing. (Indiana Limestone Quarrymen's Association.)

work out satisfactorily with any type of frame. In the northern States either common brick or concrete backing generally requires some type of furring, while plaster may be applied directly to hollow terra-cotta.

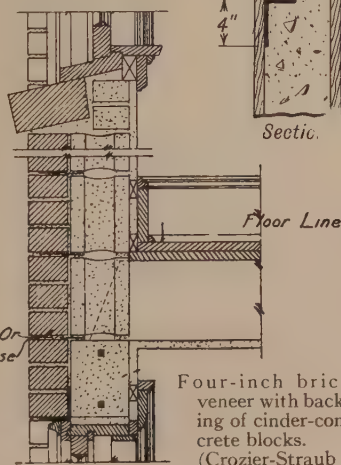
The choice would then lie between the following combinations, all of which might appropriately be placed between an exterior finish of face-brick and an interior finish of plaster.

- (1) Common bricks with either terra-cotta, metal, or wood furring strips, and metal, or wood lath.

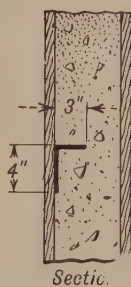
- (2) Poured concrete with terra-cotta furring.



(I. L. Q. A.)



(Crozier-Straub Co.)



(Crane and Nolan.)

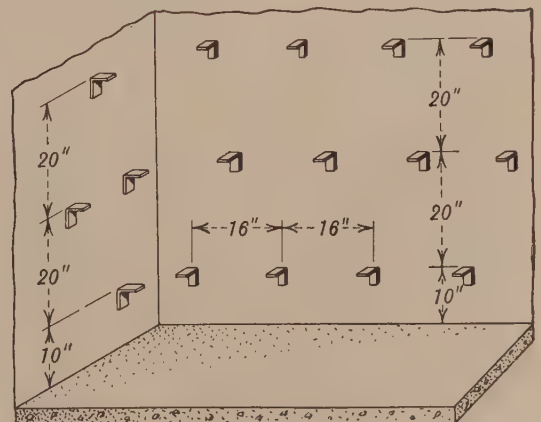
- (3) Cement-block or cement-bricks, composed of either sand, slag, or cinder-aggregate and used either with or without terra-cotta furring, according to climatic conditions and the type of occupancy.

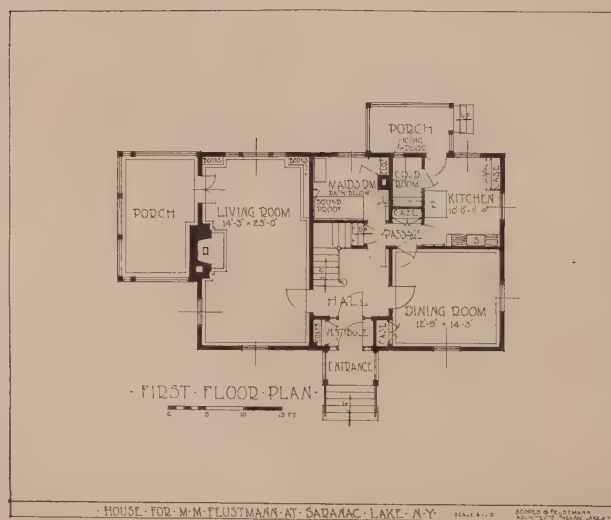
- (4) Terra-cotta blocks of various patterns upon which the interior plaster is applied directly.

The appearance of each type of construction would be the same except for the wall thickness. When supported at each floor-level by spandrel beams, or employed in wall-bearing structures of only a very few stories, any one of these combinations would have sufficient strength to carry the imposed loads. The ideal of permanency in construction might possibly eliminate types of furring and lathing other than terra-cotta, but beyond this the choice almost invariably depends upon relative cost.

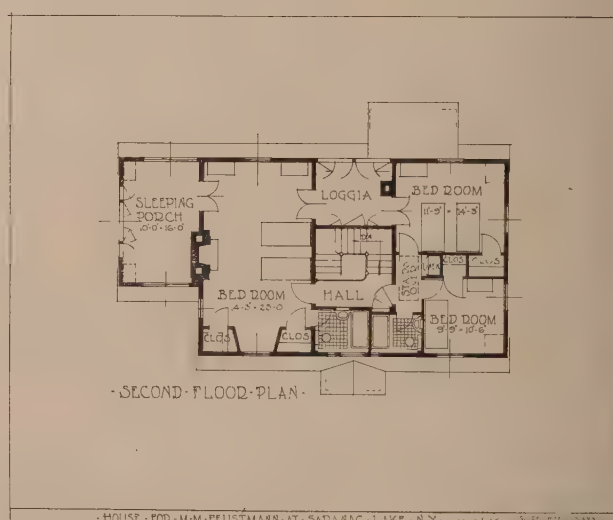
In the case of floor-construction, relative cost is largely influenced by engineering design: in comparing the prices of different wall-sections very little engineering knowledge is required. The minimum wall thicknesses of various designs are governed either by the local building ordinances, or by good practice. The codes also specify, in most cases, the character of bond required between the exterior finish and the backing, or body of the wall. If it is composed entirely of brick, a thickness of three courses, twelve to thirteen inches, is usually necessary for exterior work. When permitted by the building-code, an eight-inch thickness may be used for panel-walls. If this is done, it will be desirable to avoid through-headers. "Snap-headers" may be employed to give the desired exterior effect and the wall held together by means of metal bonds. In general an interlocking bond is far more desirable than the use of metal for attaching the exterior finish to the backing, but through-headers are likely to cause leaks in an eight-inch wall and many designers prefer uncorrodable metal bonds, well-bedded in cement mortar.

When bricks are placed as a veneer over poured-concrete walls, it is necessary to lay out carefully the locations of the bonds which must conform to the brick jointing. These are then attached to the inside face of the exterior form before the concrete is poured, the lower, vertical leg of the bond being bent outward into the brick-joint after the concrete has been stripped. Brick curtain-walls are often used with buildings having reinforced-concrete frames. In order to make tight joints recesses are necessary at columns, and spandrel-beams are usually slightly sloped to provide against the infiltration of rain-water.





HOUSE FOR M. M. FEUSTMANN, SARANAC LAKE, N. Y.



Scopes & Feustmann, Architects.



HOUSE, G. RAY BOGGS, SANTA MONICA, CALIF.

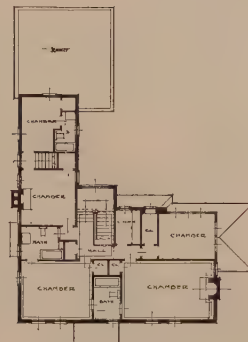
John Byers, Architect.



HOUSE, G. RAY BOGGS, SANTA MONICA, CALIF.

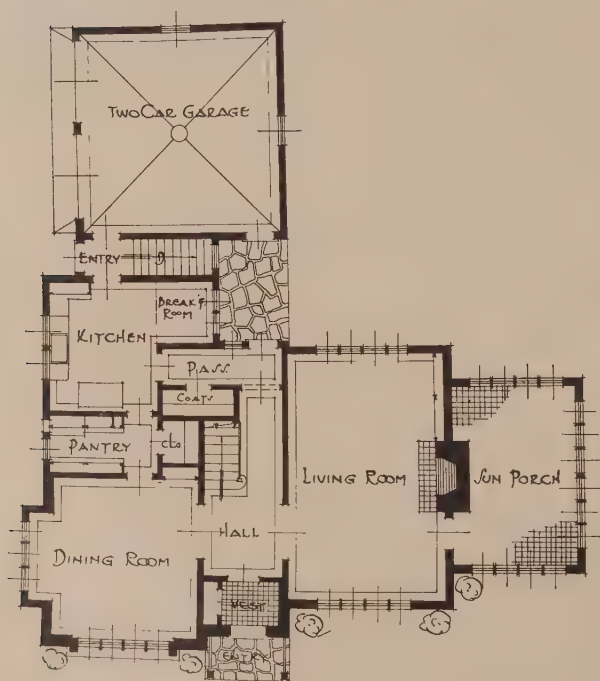
John Byers, Architect.



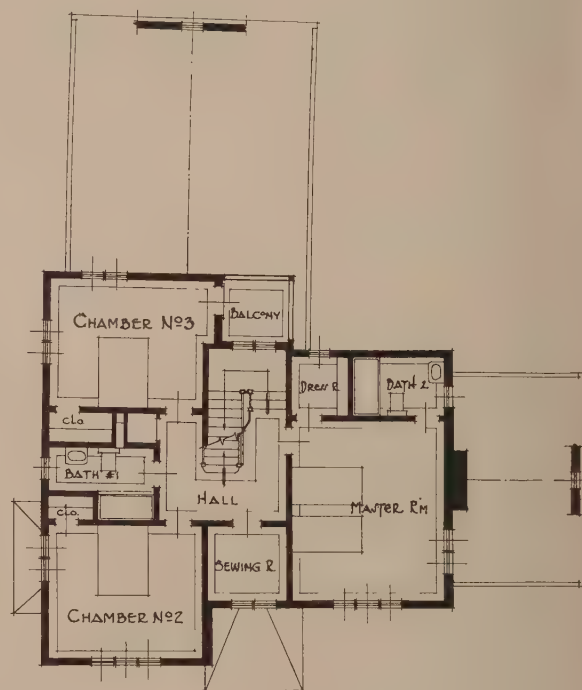


HOUSE, HENRY M. BROOKS, CLEVELAND, OHIO.

Harlan E. Shimmin, Architect.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Americanizing Foreign Trees for Our Timber

THE fact that this country already grows some six or eight times as many important tree species as Europe does has not discouraged the United States Forest Service from experimenting with the possibility of naturalizing valuable European species in our forest lands. The Priest River Forest Experiment Station, at its field station in northern Idaho, recently completed a ten-year observation of six species alien to this region although grown to some extent elsewhere in this country. These were Norway spruce (*Picea excelsa*), Austrian pine (*Pinus austriaca*), Scotch pine (*P. sylvestris*), eastern white pine (*P. strobus*), Norway pine (*P. resinosa*), and European larch (*Larix europæa*).

The trees were set out in lots of one hundred, and with the exception of Norway pine were two-year-old seedlings. The Norway pine were in two lots, one a year old and the other five years old. The results were various: Eastern white pine showed clearly that it was not fitted to resist the intensely dry summers of Idaho. Norway pine suffered nearly as much from the dryness, developing good color and foliage, but running up lank and scrawny with an inherent weakness of stem. European larch suffered much because planted on an unfavorable site, losing half of the plants during the first two years; but even allowing for this disadvantage, the results did not warrant further planting from a timber-yield standpoint.

The immigrant from Austria showed more promise, and although the growth for the first five years was slow, the surviving trees showed a commendable sturdiness. Rainfall in Idaho is considerably below what would be expected for Central European mountain regions, and this, it is felt, explains the retardation of growth. In the Southern Appalachians or the Ozark Mountains conditions would be more nearly normal for this tree.

The best results were obtained from the Scotch pine and the Norway spruce. The latter was particularly promising and in the estimation of Forest Examiner J. A. Larsen, who has reported on these experiments, may become an important tree for northern Idaho. It shows a high yield when managed for comparatively short rotations, and in this country grows much better in height and form than it has ever done in the Eastern States.

A Cover Competition

The *House Beautiful* Cover Competition has been an annual event now for the past four years. The announcement of the fifth competition offers, in addition to the first prize of \$500, four special prizes of \$250 each and six honorable-mention awards. The student certificate of merit (with honorarium), offered for the first time last year, is continued this year for the best design submitted by a student in any school of art. The exhibition of one hundred or more of the best designs, which has been a feature of the competition since the beginning, will be further extended this year, and covers will be shown in all the important cities from coast to coast. The competition closes January 14, 1927. Full particulars regarding it may be obtained from the Competition Committee, *House Beautiful*, 8 Arlington Street, Boston, Mass.

Announcements

E. James Newby has opened an office in Dumont, N. J., at 166 Johnson Avenue, for the practice of architecture. He will be glad to receive manufacturers' catalogues and building information.

Anton Ansel, Architect, announces the removal of his office to 1115 S. Wisconsin Avenue, Oak Park, Ill.

Emery Roth, Architect, has removed his office from 119 West 40th Street to 1440 Broadway, Room 2470, New York City.

Max F. Mayer, Architect, has removed his office to New Donaghey Building, Little Rock, Ark.

W. Wiegand, architect, wishes to announce that he is now located at 597 Fifth Avenue (Scribner Building), New York City.

J. Christopher Fulleylove, architectural perspectives, announces the removal of his studio to Suite 1120-21, Charlevoix Building, Park Avenue, Detroit, Mich. Telephone, Cadillac 3968.

G. Meredith Musick, architect, has removed his offices from the Foster Building to 224 Republic Building, Denver, Colo.

John B. McCool, architect, announces the opening of offices for the practice of his profession at 49 Geary Street, San Francisco, Calif. Telephone, Sutter 4630.

Humphrey Nolan and G. Alvoyd Yeomans, architects, announce the opening of an office for the practice of architecture under the name of Nolan & Yeomans, in St. Augustine, Fla. They will be glad to receive manufacturers' catalogues, samples, etc.

The names of Arthur N. Starin, architect, and Virginia B. Starin were omitted from the last issue of the telephone directory. Their office is at 48 Brick Church Plaza, East Orange, N. J., and the telephone is Orange 1440.

The former partners of the late Howard Van Doren Shaw will continue the office and practice of architecture under the firm name of Howard Shaw Associates, at 104 South Michigan Avenue, Chicago. The partners are: Ralph Milman, George B. Eich, Wm. Ziegler Nourse, Archibald S. Morphett, and Elmer J. Fox.

Percival R. Pereira, architect, has removed his office from the Lincoln Building to 714 Polk Building, Detroit, Mich.

Albert E. Taylor announces his removal from 532 So. 51st Street, Philadelphia, Pa., to Vernon Road, Drexel Hill, Pa. Manufacturers' literature and samples are requested.

The Treasury Department, Office of Supervising Architect, announces:

There is a vacancy in this office for an architectural draftsman, paying \$2,000 per annum. While the position is a permanent one, the man who fills it will eventually have to qualify through the U. S. Civil Service, by examination.

At present there are no eligibles on the register and we are authorized to seek a man to fill this position. He will receive probational appointment which may help him on the competitive examination.

Our preference would be approximately as follows:

1. An *architectural draftsman* who has studied one or two years in some technical school with one or two years experience in some architect's office.

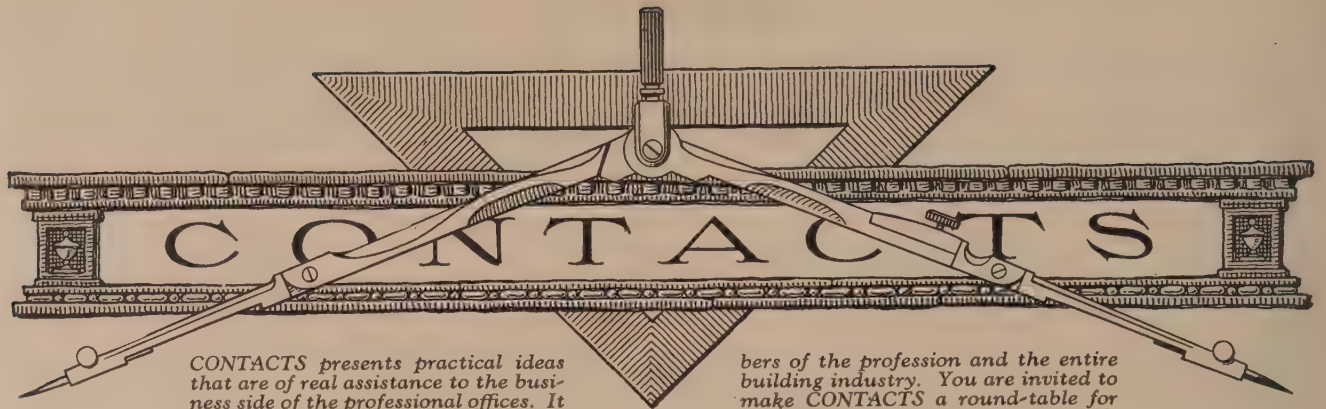
2. Should show ambition and an inclination to prepare for Civil Service examination and become permanently attached to this office, starting at \$2,000 per annum.

3. A young man reared in greater New York and expecting to remain here. (Preference given to a young married man.)

A. B. McCulloch,

Supervising Chief Engineer,

731 Custom House Building, New York, N. Y.



CONTACTS presents practical ideas that are of real assistance to the business side of the professional offices. It is also the purpose of CONTACTS to bring about a better understanding and co-operation between the mem-

bers of the profession and the entire building industry. You are invited to make CONTACTS a round-table for your ideas. Address CONTACTS, ARCHITECTURE, 597 Fifth Avenue, New York.

The New Problem of the Architect

Getting Out of His Office—Not Getting In

By Samuel Warren

A FAMILIAR sight to him whose job it is to call upon architects is the long office-building corridor, floored with terrazzo and wainscoted with marble, with two endless rows of exactly similar frosted glass doors.

The hundredth door has on it a strange word, "Architect." If you open that door you step for an instant out of the business world into a little section of individuality. There may be the same telescopic partitions, "built by the mile and sold by the foot," and other usual office impedimenta, but it will have an air distinctly its own. Some paint of an uncommon color, some framed photographs or renderings, a plaster cast or so, have given the lobby of this office an entirely different appearance.

The caller cannot help but feel that here is an office where business takes on other phases; has to do with what are usually considered the leisure things of life. In this office art with its capital "A" must be foremost. Gay smocks add to the exotic air—or did till brokerage firms took them up.

If a salesman is calling he gropes blindly for half-remembered ideas on art and architecture. He feels a presence. His material develops awkward corners and raucous colors; or, if his material is one which he has been told has been specially designed to meet the needs of art and architecture, he immediately feels that this is its one and only value.

WANTED: THE FACTS

My business for several years has been to promote the use of a basic material which enters into many phases of building construction. This material was produced because it made possible certain architectural effects. It could not be sold by just dropping into an office and selling on price and performance in competition with a similar product. From selling I learned something of the problem of the architect of to-day.

When finally the swinging gate had opened and I was face to face with the man I wanted to see, I told him of the beautiful results and artistic effects that my material would accomplish for him. But I found him rather cold. Chance gave me the key to the trouble when I lectured one night on the subject of stucco, expecting to be questioned later on

texture and color. Instead I was given a severe quiz on, "Types of metal lath," "Proper mixtures for base coats," etc.

Then I realized that the architects present had visualized far better than I could the artistic merits of my material and wanted the facts of construction—suitability, durability, cost, and method of application. To have that knowledge, and make known to the architect that I had it, has since been the method of selling. That I have tried to adopt.

THE NEW PROBLEM

The practice of architecture to-day is far different from that of several generations ago. At that time there were but a comparatively few basic building materials and appliances. The well-trained architect could and did know them all and know them thoroughly. To-day the problem is entirely different. Drawers of catalogues can do little more than scratch the surface of all the materials and appliances waiting the recommendation of the architect. His problem is real and difficult. How can he choose rightly among this mass of material?

GETTING OUT OF THE OFFICE—NOT GETTING IN

The architect need have no humiliation in not knowing all there is to know about all the different materials and appliances. Even the largest office, with experts in different lines, cannot hope to have it. But he can know where to get it. Much of it he must get from the representative of the company manufacturing the product that he is considering.

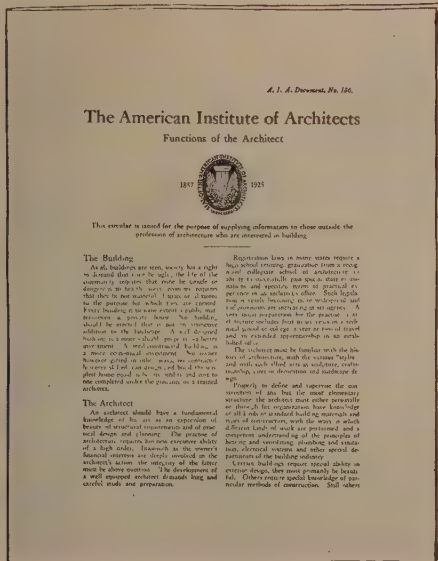
The trouble that salesmen have of getting into architects' offices is quite largely the result of the manufacturers in the past, who have sent out ignorant and untrained salesmen. Happily that situation is changing. With competent salesmen, familiar with all the details of their material, and with so many firms taking the sensible (ofttimes called altruistic) stand of honestly trying to tell the truth about their material, it is not so much now the problem of getting into the architect's office as getting out. To-day he relies on the firm and its representatives that have his confidence and places them as they should be, as adjuncts to his staff. And it makes selling to architects an interesting and satisfying job.

(CONTACTS—Continued)

What Duties Does the Architect Perform?

The Extent of the Owner's Knowledge of Architecture—The Three Methods by Which an Architect Is Paid—The Basis for His Selection

WHAT the functions of the architect are and his relationship to the owner is the subject of an extremely interesting document* of the American Institute of Architects, based on an intimate knowledge of the architects in the city and smaller communities. The brief is of prime importance not only to the architect but also to his clients.



THE DUTIES OF THE ARCHITECT AND OF THE OWNER

The Institute explains that after he has been appointed, an architect obtains his client's description of the requirements, studies the problem from all available angles, advises the client of ways in which the first idea may be improved, and makes rough drawings or sketches of the building, expressing this. These sketches should be modified and redrawn until both the owner and architect are satisfied that a completely adequate solution has been found. If an owner is not familiar with drawings as an expression of form, the architect should carefully explain them, and if necessary have a model of the final structure made.

When the sketches have been finally approved, working drawings with dimensions and notes and specifications are made. Large-scale and typical full-size details are often drawn at this time. The production of working drawings is very costly. Changes in them usually involve serious expense. Hence, working drawings should not be begun until the scheme is well developed and determined. The owner should freely give his personal time to an examination of these drawings, the details and specifications.

The next step is that of obtaining proposals from contractors. If competitive bids are desired, the architect usually prepares a list and should carefully examine the ability, financial responsibility, and reputation of those he

recommends. When the owner selects the contractor, the architect usually feels relieved of responsibility. However, he should report his objections to the owner if he believes the contractor is unsuitable. The American Institute of Architects issues special forms for contractual relations.

During the progress of the construction, the architect supervises the work, and he should diligently guard the interests of the owner.

THE ARCHITECT'S CHARGES AND THE COST OF THE WORK

The fees to be paid should always be discussed frankly by owner and architect, and determined clearly at the beginning of the operation.

The Schedule of Proper Minimum Charges of the American Institute of Architects defines the customary fees if the work be performed on a percentage basis. If the operation be divided into several contracts the architect's labor is greatly increased, and he eventually performs the work for which a general contractor would be employed, who would probably receive ten per cent for his services. In such event the architect should be adequately paid for such additional services by a marked increase in the percentage of his fee. It is usual for the owner to pay for the cost of special engineering services, travelling expenses, blue-prints, long-distance telephone calls, and telegrams.

Two other forms of compensating the architect obtain to some extent. The architect may agree with the owner upon a specified lump sum for his services in supplying drawings, specifications, and even supervision for the whole operation; or he may be paid for his expenses in doing the work plus an agreed profit, which may be either a percentage of this cost or a lump sum for the architect's personal services.

An architect may be employed to make drawings without supervision of the construction, or to supervise without having made the design, but this is generally unsatisfactory for both owner and architect.

In general, the production of simple standardized work requiring little detail is less expensive than work requiring a large number of detail drawings. The cost of producing drawings for a small operation is proportionately very much higher than for a large one. The office expenses of the architect in producing drawings and specifications is much greater than the average client realizes. Much time is absorbed in the thorough study of the simplest problems. He must usually make many sketches in order to arrive at the best solution. He must be prepared to employ competent and expensive assistance in making the working drawings. [In 1925 the salaries of competent architectural draftsmen varied from \$40 to \$80 per week, and many drawings require the exclusive time of one man for several weeks.] To this must be added the cost of specification-writing, stenography, rent, drawing materials, and other overhead expenses without taking account of the superintendence which usually occupies from six months to a year. Furthermore, the architect's office force must be maintained at all times in a high degree of efficiency. Consideration of these facts will show that the usual professional charges of an architect are small in comparison with his expenses and the work he does

* A copy of this document will gladly be sent to architects for their own use or for the information of their clients.

X-Raying Electrical Service

Providing for Excellence in the Unseen Parts of the Building

By William L. Widdemer

HEALTHY nerves make small demand on pathology. So it is with electrical wiring, which, with sufficiently close analogy, may be likened functionally and anatomically to the hidden nervous system of humankind. Fundamentally and uniformly sound wiring is an exhaustless reservoir of satisfaction to the users of any structure—office-building, mansion, or cottage. It has assumed a quasi-physiological value to commercial efficiency and to domestic comfort, and it eliminates a number of “first aid” appeals from the list of costly items which constitute that bugbear, “Overhead.”

Hence its importance to the architect, who, as artist-creator, is present when the foundations of beauty and utility are laid and who controls creative means to ideal ends.

The architect has a happy ability to satisfy a double debt with a single payment. The first debt he owes to himself—the most exacting of all creditors in matters pertaining to technical excellence of plan and to future performance. Every wall that he erects contains vital parts visible only to the X-ray penetration of professional conscience.

“But,” the architect says: “It is not humanly possible for me to analyze the metal; to test the dielectric strength of each inch of insulation; above all, personally to establish co-ordinate standards from entrance box to incandescent lamp or electric fan.” In other words, where can the architect rest an ultimate, undivided responsibility for electrical service, that shall satisfy his own soul?

The second claimant is the client, who also represents all future owners and occupants. He is avowedly ignorant of what is hidden within the walls, but his empirical conclusions as to its functioning are generally accurate whether expressed in approbation or wrath. Whether it be a weak spring in a wall switch, a mechanical defect in the means of power supply to an elevator, or a short circuit where there should be lifetime service—no matter how limited the area of the inconvenience—Mr. Owner and Mr. Occupant are likely to unite not only in denouncing “the whole damned electrical work,” but in mentally fixing the responsibility in a quite different quarter from that where it ultimately belongs.

On the other hand, should everything work smoothly year after year, conductors hold up, insulation not deteriorate, mechanical parts stay strong and accurate, there will probably be only an acceptive reticence, which, alas, is the average man’s usual expression of appreciation of a purchase.

The architect, then, can fulfil his twofold obligation—to himself and to his client—by specifying an electrical equipment sound in every part. Not only must it be so complete as to provide for every present and future need of the occupants (one takes this for granted nowadays, as one assumes an adequate distribution of water); but it must also be proof against time, against electrical contingencies, and against abuse by thoughtless tenants. Moreover, *it must have no weak links*. A defective attachment or a metal conductor of inferior quality may start serious trouble or at least set up dangerous conditions. One neglected hole in an otherwise perfect race course may cost a life; so with the course over which electric current races.

Obviously, the next question is: “How shall we obtain such assurance of quality as will justify our choice? The electrical industry employs an army of engineers in specialized research and design and an army of craftsmen. Some of these devote their lives to insulating material alone, others to meters, still others to wire or to armored cable. If the architect were to weigh personally all merits—to institute technical comparisons among all the makes and items of



X-Raying Electrical Service (Literally), use of portable x-ray outfit with fluoroscope and protective screen to locate pipes and wires in walls.

wiring material that are on the market—he would have no time to design buildings.”

There is only one practicable way. The selection must be determined by lofty repute, generally acknowledged quality, proven dependability. It is the triumph of sincerity in the electrical industry that its best past performance can be accepted, without reserve, as a pledge of future value.

A responsible manufacturer is in a position to save many precious hours of the architect’s time when the latter is drawing his electrical specifications. Such a manufacturer need know only the size and purpose of the building and how its interior is to be subdivided, in order to offer to the architect a perfectly appropriate listing of materials for that specific structure. A residence of a certain type is to cost \$10,000. Here is a complete, illustrated list of co-ordinated items. Let us call it “Specification A.” You need only turn it over to the clerk or stenographer who is assembling your recommendations. You trust the manufacturer—you can depend on his list. Another residence of the same type is to cost \$20,000. Here is “Specification B.” Use it in the same way—and so on, according to the size and character of the structure.

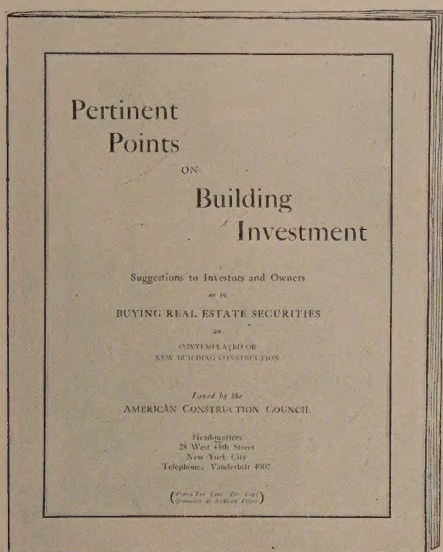
Similar assistance can thus be given to the architect in the preparation of electrical specifications for buildings of the “monumental” type—intended for public or commercial use and conceived on the largest and most elaborate scale.

(CONTACTS—Continued)

Pertinent Points on Building Investment

THE average member of the investing public whose money goes into mortgage bonds or other forms of financing building construction seldom possesses the information necessary to make a wise selection of securities, nor does he appreciate what points such data should cover.

Some real estate securities are good; some are bad; some are fair; some are highly speculative. Every building must be considered as a separate problem.



There are many items that go to make up a sound real estate security, and they must be borne in mind by the building investor.

Taking for granted such points as a reliable loaning institution and proper location and design for the purpose for which the building is needed, the most important thing is first-class construction.

The passing of the acute building shortage with its short-lived building boom, and the return to normal consideration of building costs and values make structures of inferior quality an increasingly heavy liability.

The public must be most cautious about the kind of construction on which, and the concerns to whom, it lends its money for building investment.

This book, issued by the American Construction Council, contains suggestions to investors as to buying real estate securities.

A copy will be sent readers of ARCHITECTURE at their request.

The Exceptions in the Case

I AM not in favor of using the term "or equal," though there are possibly cases where the use of this phrase is excusable.

1. If the architect has a definite choice of materials or product, he should say so.

2. If he wishes the contractor to select the materials or product, he should not name any article, but submit the specifications that the material must meet.

3. When he wishes to give latitude to the builder, he may ask for alternate prices on any material that the contractor wishes to substitute. A statement to this effect

may be placed in the condition, allowing the contractor thereby to offer suggestions.

The folly in using "or equal" is that no two materials or products can be equal. It makes it necessary for the contractor to secure prices on the several products. The contractor, if bidding under the competitive system, is forced to use the cheaper product. The cheaper product is likely to be the inferior one.

—H. R. SLEEPER, of the office of F. L. Ackerman, Architect, New York.

One Material as a Standard

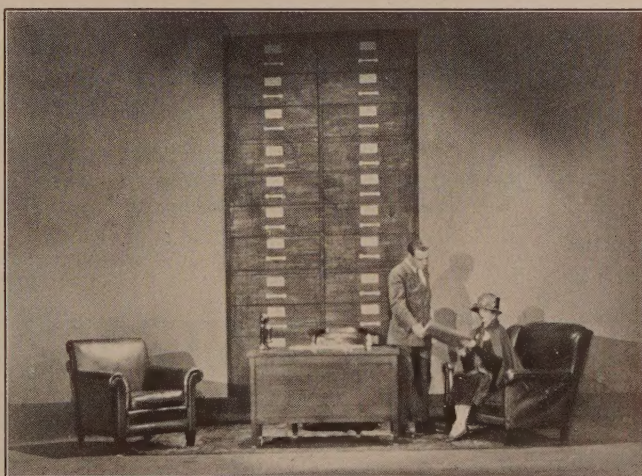
Following the American Institute of Architects' printed general conditions of contract, I use a heading called "General Descriptions" which is, in a measure, an appendix to the general conditions. The first paragraph of this heading is as follows:

"When more than one kind or manufacturer of a material is specified, the option shall be with the Contractor, but the choice shall be confined to the materials mentioned. When one kind or EQUIVALENT is specified, no change may be made without the written consent of the Architects. (See Article 12, General Conditions.)"

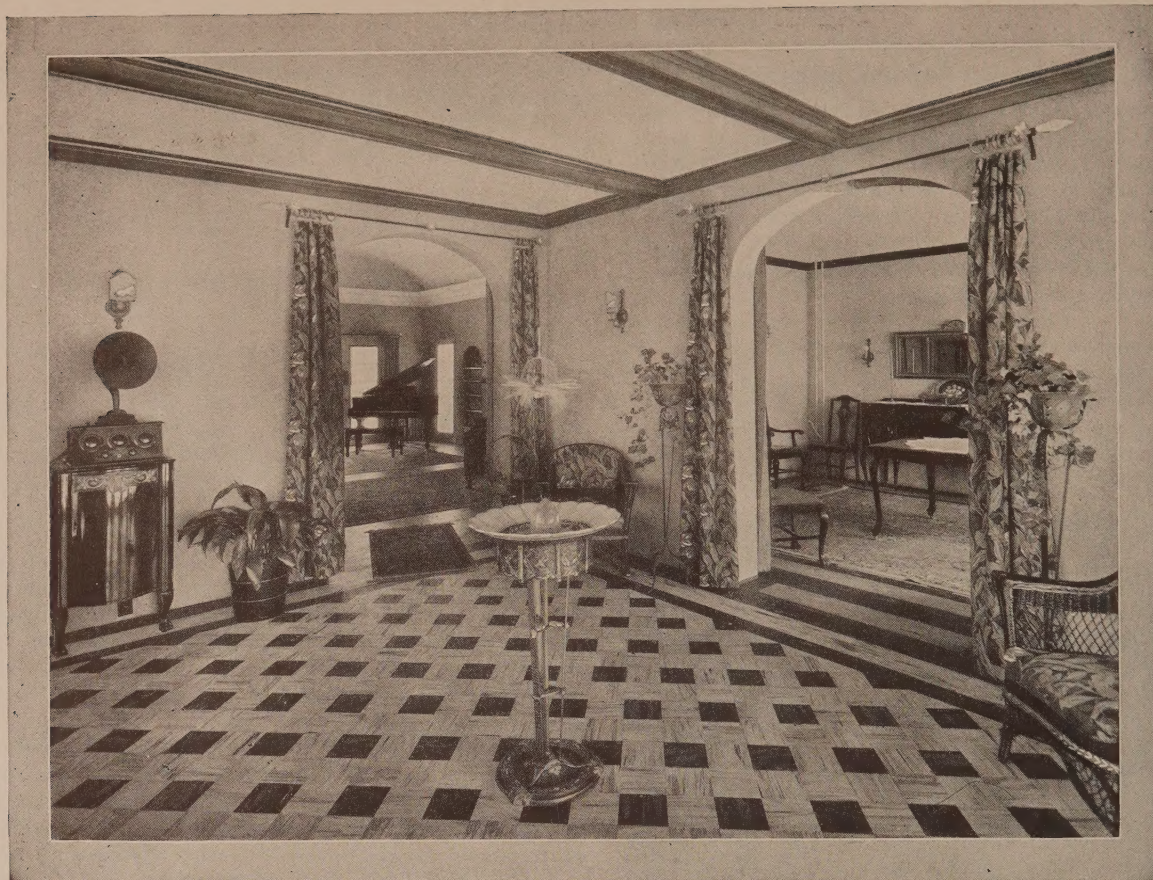
Throughout my specifications I specify one material as a standard, followed by the words, "or equivalent." This I find assists in obtaining definite proposals on equal basis for comparison. After the contract is awarded on the basis of the specifications a general form letter is sent to the contractor calling his attention to this clause, and asking him to feel free to submit for our investigation any materials which he might care to propose as substitutes for the standards as named. This gives sufficient time to make a careful investigation and analysis of the proposed substitute materials, and we have so far found that this method of handling the work is entirely agreeable to the builders.

We find that in some States, especially in connection with public work, that if only one material is specified it is necessary from a legal point of view to qualify this with the words "or equivalent," and since a large part of our practice is in public work we follow this rule in all instances.

GEORGE A. CHAPMAN,
Of Tyrie and Chapman, Architects,
Minneapolis.



An architect's office according to the stage. This setting is taken from "The Great God Brown," the play by Eugene O'Neill. Brown is an architect.



And in private homes—

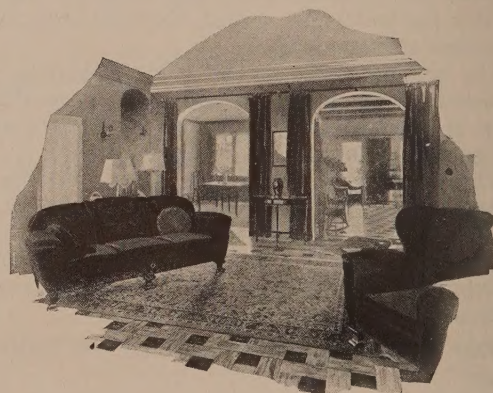
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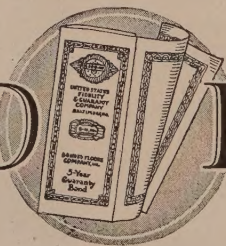
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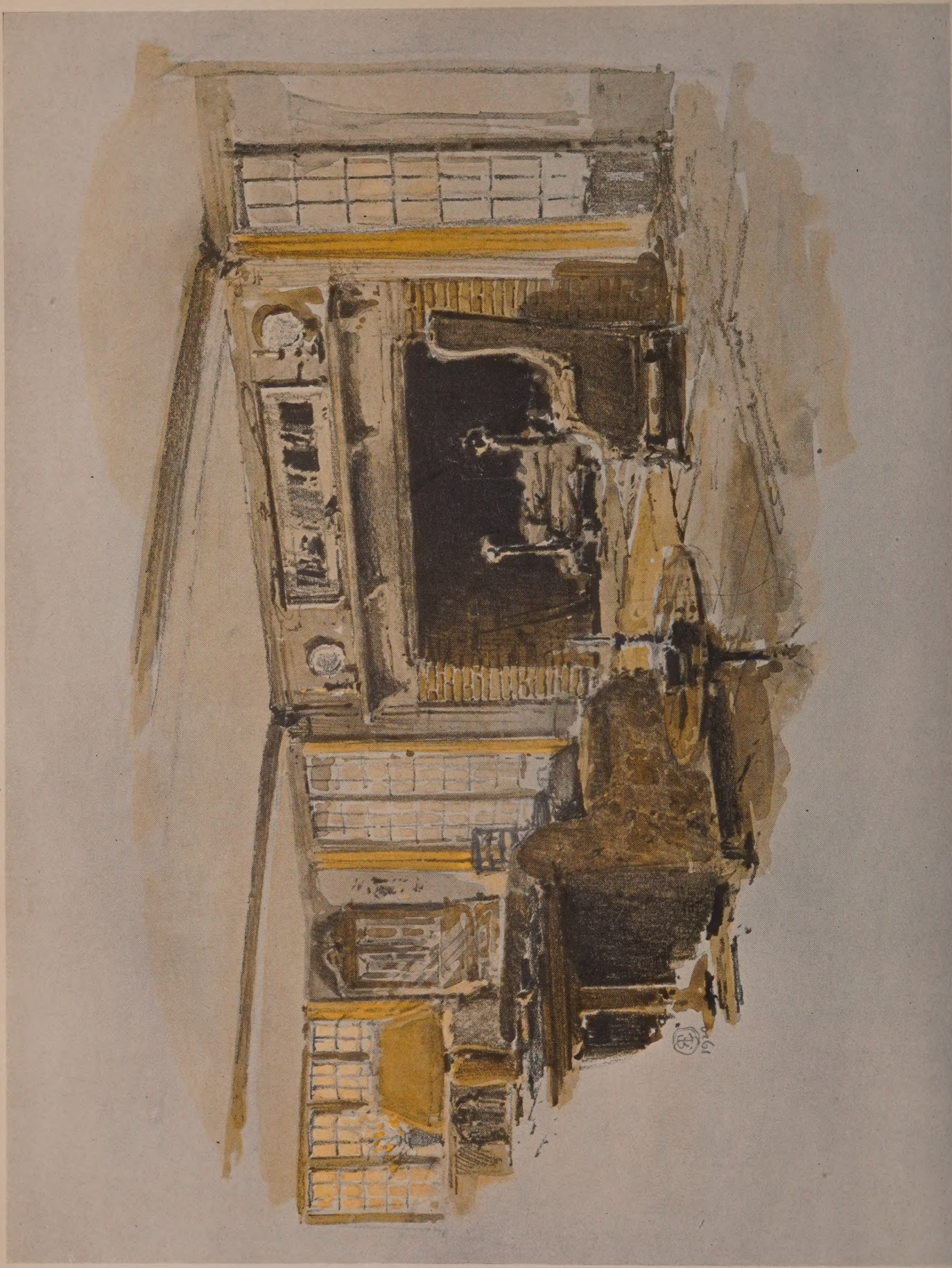
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Sketch to aid clients' visualization
[ARCHITECTURE Frontispiece]

By OTTO R. EGGERS, The Office of JOHN RUSSELL POPE, ARCHITECT